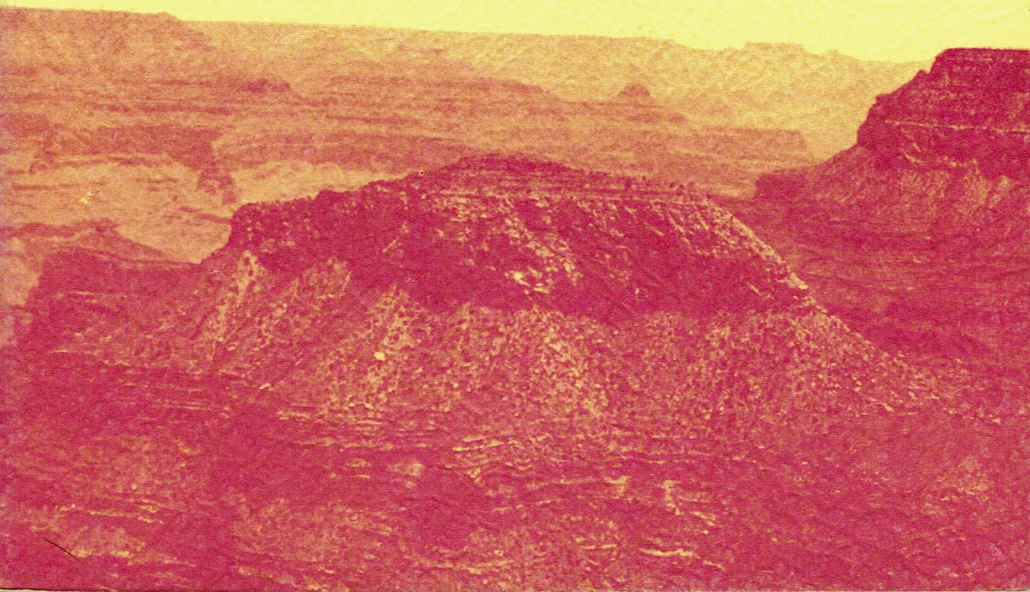
GRAND CANYON TREKS

Harvey Butchart

La Siesta Press



Grand Canyon Treks

GRAND CANYON TREKS

A Guide to the Inner Canyon Routes

by
HARVEY BUTCHART

La Siesta Press
1970

Cliff dwelling at mouth of Nankoweap

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LA SIESTA PRESS
BOX 406
GLENDALE, CALIFORNIA 91209

PRINTED IN U. S. A.

ISBN 910856-38-9

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Contents

Foreword	7
Introduction	11
Inner canyon routes	17
Kaibab trail	17
Bright angel trail	18
Bright angel campground	21
North kaibab trail	23
Clear creek trail	25
Grandview trail	30
Hance trail	33
New hance trail	36
Tanner trail	37
Hermit trail	40
Esplanade west of bass	47
From great thumb to supai	48
Routes to havasu canyon	50
Nankoweap basin	53
Chuar valley	56
Unkar valley	57
Hindu amphitheater	59
Shinumo amphitheater	61
Tapeats and deer creeks	63
acknowledgements	67
references	69
index	70

Photos not credited are by author

Foreword

We can only say that the Inner Grand Canyon is one of the most beautiful, awesome, friendly and vicious regions of the world, perhaps we might compare it with the exotic heroines of TV thrillers. Check out a map or a guide book and you find a gorge and two or three well-built trails which obviously take you in and out of the canyon in quite a simple manner. Any other region seems but a little ways from these constructed trails. If you read further (as in the Natural History Museum's *Inner Canyon Hiking*), you find that there are certain "abandoned trails" that can be travelled. These form a net over and around the maintained trails.

On arriving at the Canyon, say at Mather or Yavapai points, and after looking down into the vast gorge, it slowly seems to appear to be a rather simple operation. Certainly it is quite a drop, but compared to that from the summit of Mt. Whitney to Owens Valley it looks rather gentle. Compared with the crags of Yosemite, the cliffs seem almost harmless. The ledges look wide enough to support a freeway, and they are broken at regular intervals by cuts that might offer easy access from one ledge to another.

It is only after getting into the gorge that one realizes the problems and difficulty of the terrain. What appeared to be broad ledges are often filled with debris to their very edge. These nice little cuts may suddenly shoot over a 100-foot cliff. Distances grow so what looked like a few hours stroll turn out to take as many days. Supplies of water and food often are the controlling factor.

Unfortunately guidebooks and information are sparse as to these inner canyon routes. Several years ago when Colin Fletcher* was planning his trip along the inner gorge from the western to the eastern boundary of the National Park, he spent much time trying to gather information.

In his book he wrote: "I inquired of park rangers, packers, geologists, and men who had 'run' the river several times. But before long it dawned on me that when it came to extensive hiking in remote parts of the Canyon, none of them really knew what they were talking about. So I set about tracking down the experts on foot travel. In the end I discovered that they totaled one: a math professor at Arizona State College in Flagstaff. But Dr. Harvey Butchart, I was relieved to find, knew exactly what he was talking about."

Harvey Butchart was born in Hofei, China, some 250 miles west of Shanghai. He received his preparatory education in the American School located in this remote area. Not being able to provide the customary sports, the school encouraged hiking and elementary mountaineering in the nearby hills. Returning to the United States, he received his degree

Harvey Butchart on Apache Point
photo by P. T. Reilly

in mathematics at Eureka College, Eureka, Illinois, a few years before Eureka's other famous graduate, California's governor, Ronald Reagan. His graduate work was at University of Illinois, where he received his Ph.D. in math in 1932.

In 1945 he came to Arizona State College (now Northern Arizona U) at Flagstaff. Butchart served as head of the math department for some 22 years, but when, with the growth of the school, this position became almost totally administrative, he stepped down. As in all of his work, he has always felt the need of contact with his subject.

Before coming to Arizona, Harvey had spent much of his vacation time in the Colorado Rockies — as he says, there is little to be climbed in Illinois. After arriving at Flagstaff, he became interested in hiking and climbing, serving 12 years as the sponsor of ASC hiking club. Slowly, after several trips into the inner canyon, he took up the project of covering all the inner trails, then branched out to the abandoned trails. Soon he was traversing trails that even the burros had made and abandoned and in later years has expanded his activities to include possible routes up draws and other saddles into country that has never been covered by any sort of a trail. During the past thirty-five years he has covered just about all of the Inner Canyon. As a good mathematician would, he has maintained exacting logs of his travels and climbs. So when Harvey says he has spent 700 climbing days in the canyon, you can be sure that the number is correct and they were spent in climbing not loafing.

* * *

The Inner Canyon travel is mildly restricted, the Park Service requiring a permit to travel the abandoned trails, which will be issued if one can show some experience on this type of travel. If you have hiked the maintained Kaibab or Bright Angel trails, you should qualify. Equivalent climbing elsewhere may be accepted.

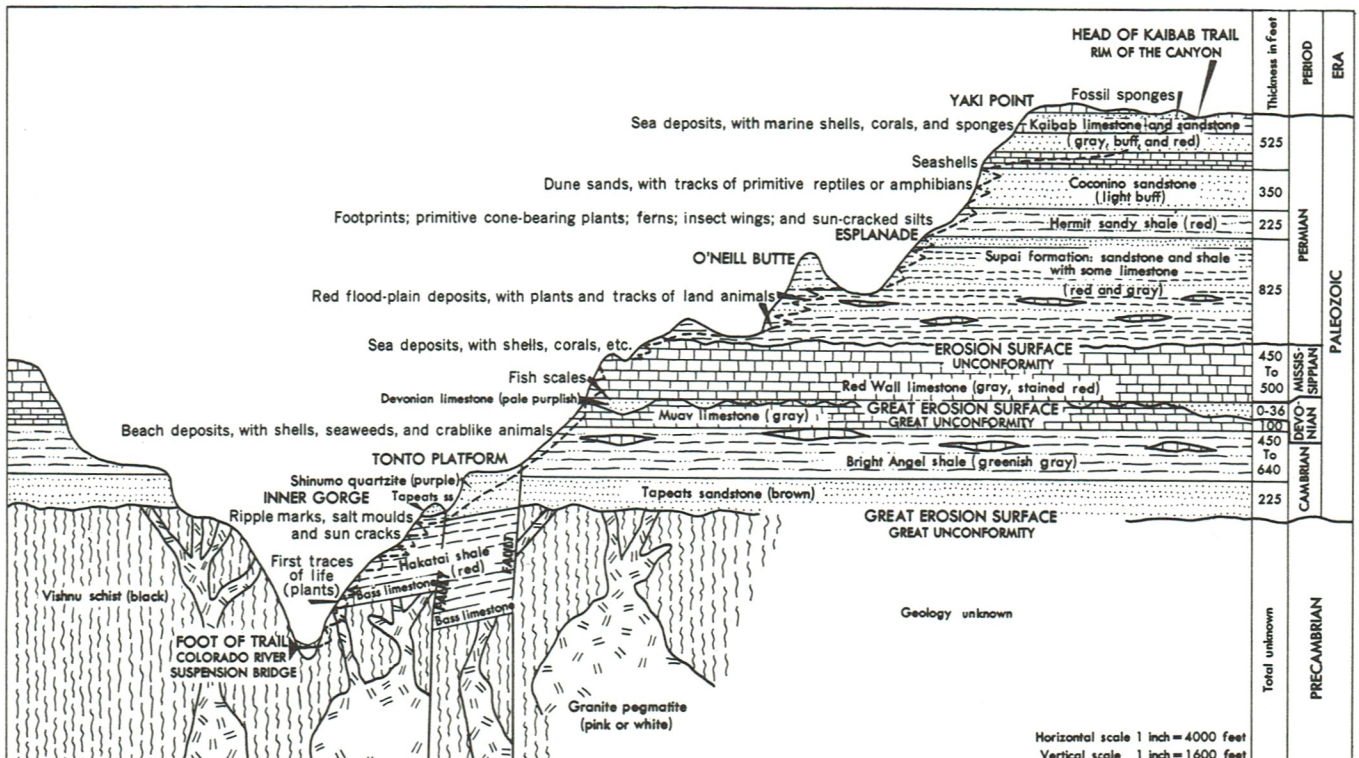
It is not the intent of the Park Service to discourage use of these old trails. Neither should the purpose of hiking them be merely an endurance test. Hiking some of the old trails can be a rewarding experience if the hiker is fully aware of the problems that will confront him. For this reason, and for your personal safety, all persons hiking below the rim in Grand Canyon National Park, except on maintained trails, MUST REGISTER AT A RANGER STATION, giving their route and expected time of return. They must be suitably equipped and physically able for the proposed trip. An inspection of equipment and supplies will be made at the time of registration. Hikers are also required to report in upon completion of the trip.

And as an old desert climber, may I personally add a word: Do not stint on your water supplies. In hot arid conditions, it has been found that as much as two gallons of water may be evaporated — and this

water will come from your canteens or your body tissues. A ten percent loss of body fluids will render you unable to do meaningful hiking and climbing. Furthermore, DRINK that water — men have been found dead of thirst in Death Valley with canteens of water at their sides.

WALT WHEELOCK

*THE MAN WHO WALKED THROUGH TIME.


HEAD OF KAIBAB TRAIL
RIM OF THE CANYON
YAKI POINT
Fossil sponges
Sea deposits, with marine shells, corals, and sponges
Kaibab limestone and sandstone (gray, buff, and red)
Seashells
Dune sands, with tracks of primitive reptiles or amphibians
Coconino sandstone (light buff)
Footprints; primitive cone-bearing plants; ferns; insect wings; and sun-cracked silts
ESPLANADE
Hermit sandy shale (red)
O'NEILL BUTTE
Supai formation: sandstone and shale with some limestone (red and gray)
Red flood-plain deposits, with plants and tracks of land animals
Sea deposits, with shells, corals, etc.
EROSION SURFACE
UNCONFORMITY
Fish scales
Devonian limestone (pale purplish)
Red Wall limestone (gray, stained red)
GREAT EROSION SURFACE
GREAT UNCONFORMITY
Beach deposits, with shells, seaweeds, and crablike animals
Muav limestone (gray)
TONTO PLATFORM
Bright Angel shale (greenish gray)
Shinumo quartzite (purple)
INNER GORGE
Tapeats ss
Tapeats sandstone (brown)
Ripple marks, salt moulds and sun cracks
GREAT EROSION SURFACE
GREAT UNCONFORMITY
First traces of life (plants)
Hakatai shale (red)
Bass limestone
Bass limestone
Vishnu schist (black)
Geology unknown
FOOT OF TRAIL
COLORADO RIVER
SUSPENSION BRIDGE
Granite pegmatite (pink or white)
Horizontal scale 1 inch = 4000 feet
Vertical scale 1 inch = 1600 feet
Thickness in feet
525
350
225
825
450 To 500
0-36
100
450 To 640
225
Total unknown
PERIOD
PERMIAN
MISSISSIPPIAN
DEVONIAN
CAMBRIAN
PRECAMBRIAN
ERA
PALEOZOIC

NPS

Introduction

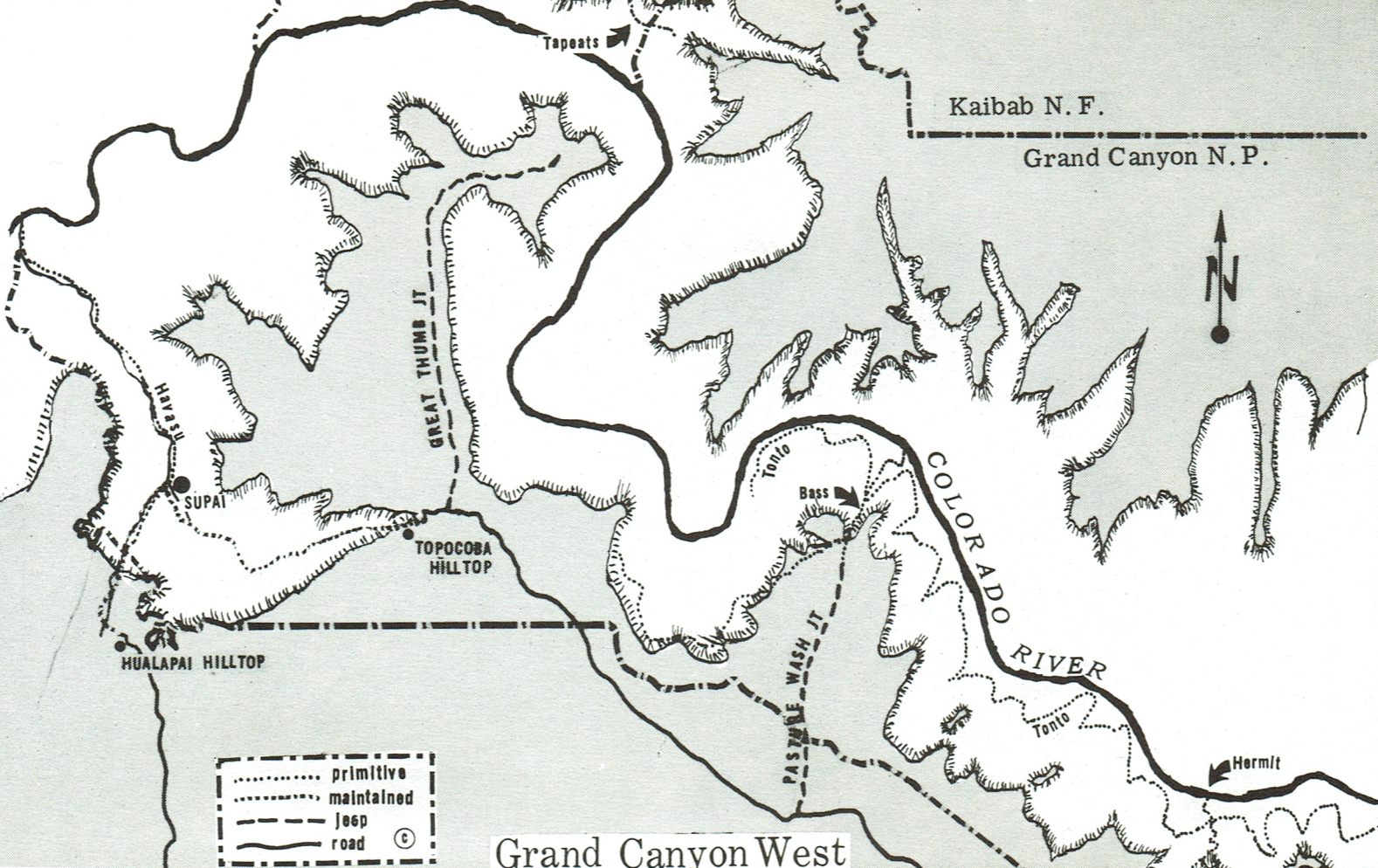
The Grand Canyon is not the place for one's first experience in hiking. Permits to hike away from the maintained trails must be obtained, and there are safety requirements to be observed. The newcomer should test himself in the summer heat and the rugged terrain before attempting the longer trips.

Some familiarity with the names of the geological formations is necessary in reading the route descriptions. The Grand Canyon is unified by the persistance of the same rock formations all the way from Lees Ferry to Lake Mead. The rim is formed of Kaibab Limestone. The Toroweap beneath is very similar, but the next lower band, the cross-bedded Coconino Sandstone, forms a buff colored cliff identifiable from afar. The next layer, Hermit Shale, is deep red and blends with the harder Supai Sandstone. The shale forms a bench that can be followed for miles, and sandstone offers more descent routes than the Redwall Limestone beneath. Muav Limestone blends with the base of the Redwall, but Bright Angel Shale erodes as a broad plateau in the eastern part of the park. The top of the Supai Sandstone forms a similar plateau in the western part. The Tapeats Sandstone forms the rim of the inner gorge the major portion of whose walls are schist and granite. Other formations in the Precambrian such as Shinumo Quartzite, Hakatai Shale, Bass Limestone, and the Dox Sandstone are not so useful in route descriptions.

A question often asked is whether anyone lives in the Grand Canyon. Nine hundred years ago people were building dwellings all through the canyon and seventy years ago white men were operating mines at several locations. Now, however, the only places to get help are Indian Gardens, four and a half miles down the Bright Angel Trail, Phantom Ranch on the north side of the river near the mouth of Bright Angel Creek, and Supai, the Indian village about 50 miles west of the south rim town of Grand Canyon.

Inner Canyon Routes

Section of abandoned trail in Nankoweap



Grand Canyon West

Inner Canyon Routes

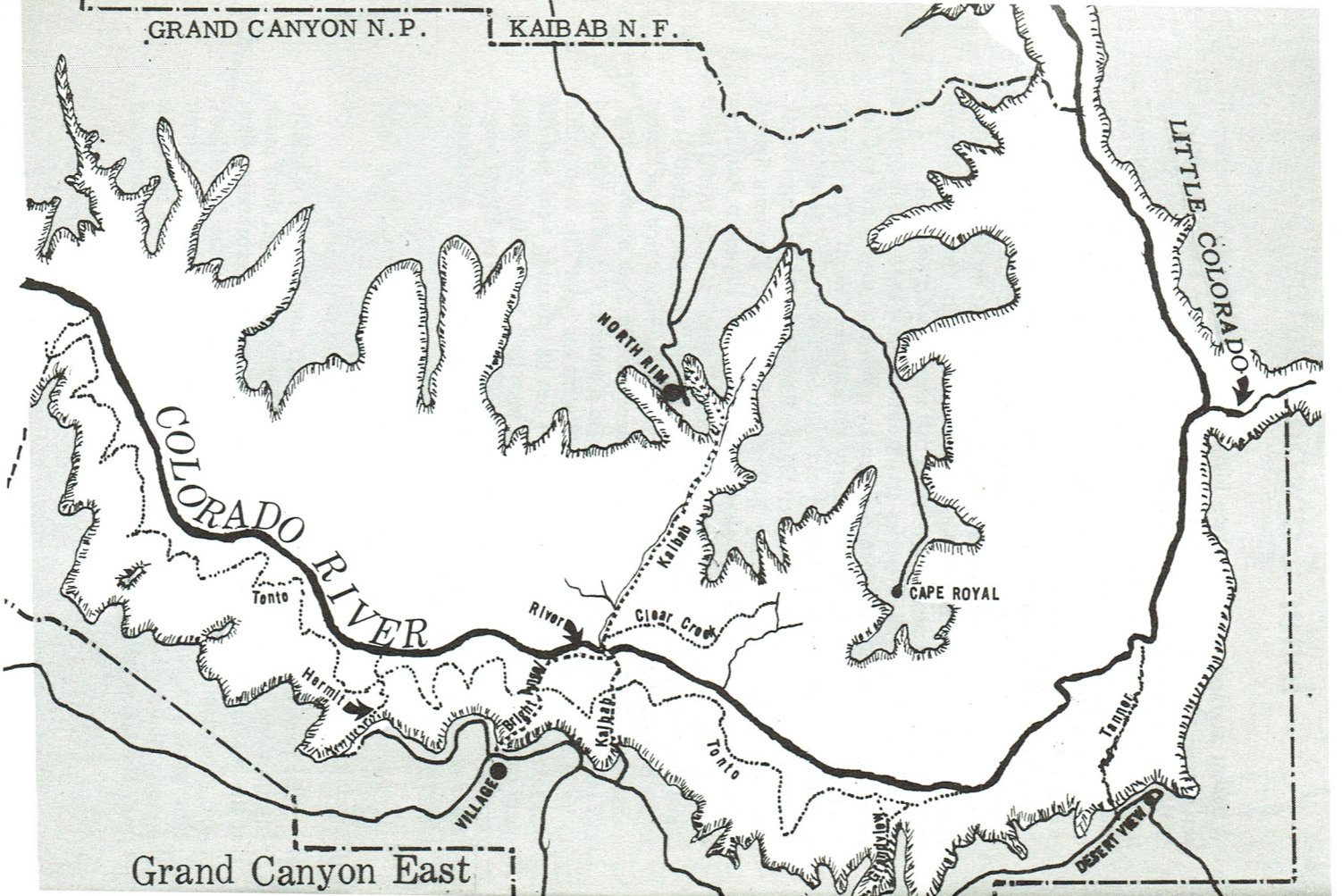
What a grand place to take a hike! This is the thought of the small percentage of the visitors at the Grand Canyon who are also backpackers. Little has been written concerning the old non-maintained trails. Still the number of hikers away from the 30 miles of modern well maintained trails has been increasing from year to year. There is a thrill in finding the unexpected, but both for safety and the maximum satisfaction, most outdoorsmen would welcome a briefing.

Walking in the Grand Canyon is mountaineering with essential differences. The main ones are the summer heat and the lack of water. One should discover his own personal reaction to the heat by at least a short apprenticeship on the Bright Angel and Kaibab Trails. Only then should he branch out to the prospectors' trails that seem more glamorous.

The annals are full of stories about unforeseen weakness due to heat and dehydration. For instance, a riverman with much experience in Glen Canyon wanted to take his first party through the Grand. The skipper promised the family of a 17-year-old that the young man would walk around all the bad rapids. Between Hance Rapid and Bright Angel Creek there are rapids where walking the bank is impossible. The man figured that he and the boy could walk the Tonto Trail to Phantom Ranch in one long day. If he had known more about the Tonto Trail, he would have taken the boy up to the south rim drive and then down the Kaibab Trail to the bottom. Instead they were in the heat all the way which was almost a disaster. They couldn't find water where the old map shows springs, and no one could walk the whole route in a summer day. The man had to lie in the shade while the 17-year-old went for help. The river guide was taken to Phantom Ranch on a mule but he remained weak and the party went on without him. A number of men have been killed by conditions of heat and dehydration. Trouble along the Kaibab or Bright Angel Trails means only the expense of a rescue by mule since there are enough hikers to take the call for help.

Kaibab Trail

The park leaflet shows where this trail starts and describes it briefly. Distant views are better than they are along the Bright Angel since much of the Kaibab Trail is on a promontory Attractive interpretative signs give geological information concerning the contacts of the formations. Mile posts are hard to maintain against the depredations of souvenir hunting vandals, but a few are left, especially along the lower half of the trail. The laziest and weakest hikers seem to be the most eager to record


GRAND CANYON N.P.
KAIBAB N.F.
LITTLE COLORADO
NORTH RIM
COLORADO RIVER
Kaibab
CAPE ROYAL
Tonto
River
Clear Creek
Hermit
Bright Angel
Kaibab
Tonto
VILLAGE
Tanner
DESERT VIEW
Grand Canyon East

their achievement and they tear down the nearest markers. At 1.5 miles from the rim is the picnic area, Cedar Ridge, where fossil ferns are protected in the bedrock under a glass case. A person of untested hiking strength could come this far the first time.

Just north of Cedar Ridge one sees a butte of red Supai Sandstone whose top is at the level of the picnic area. It is O'Neill Butte and it has been climbed at least twice, but this is for the experts. Bucky O'Neill was a former sheriff of Yavapai County. As a Rough Rider for Teddy Roosevelt, he lost his life in the Spanish-American War.

Down to the west from the Kaibab Trail one can see the Tonto Trail connecting the Kaibab to the Bright Angel Trail. During the years of 1965 and 1966, the Bright Angel Trail below Indian Gardens was closed for the construction of a pipe line. The Tonto Trail from the Bright Angel to the Kaibab Trail was improved and used by people who wished to start down the Bright Angel Trail and then go to the river. A cabin where the trail crosses Pipe Creek was partly crushed by the phenomenal snow of December, 1967. Where the Tonto Trail meets the Kaibab near the rim of the inner gorge, a sign gives the mileage over to Indian Gardens as 4.3 and promises no water. Actually, one can almost always find a trickle in Pipe Creek.

The bay to the east of the Kaibab Trail is Cremation Canyon, where some Indians cremated their dead on the rim and pushed the ashes over into the canyon. Out of sight in the east arm of Cremation are several caves. One of them contained split twig figurines, little effigies of deer that have been dated by the carbon 14 method as being from 3000 to 4000 years old. Across the bay below the Redwall Limestone, one can see two small clumps of green trees. The one to the north is a fairly reliable seep spring.

The distance from the rim to Phantom Ranch is 7.3 miles. An average hiker who wants to enjoy the scenery and take pictures should allow about three hours for the trip. Getting back to the rim will separate the men from the boys. The boys make it in 4½ hours while the men will need another hour. These times are for average hikers. Speed demons have trotted from the rim to the river and back in less than three hours. Allyn Cureton has covered the Kaibab Trail, 20.6 miles from the north rim to the south rim, in 3 hours and 56 minutes.

Bright Angel Trail

The upper part of the Kaibab Trail was constructed by park engineers to provide a direct route to Phantom Ranch, but the Bright Angel Trail is a prehistoric Indian route. Prospectors improved it and charged tourists a toll for its use. Coconino County maintained it for a time and

then the Park took it over. The Bright Angel Fault lifted the strata to the west and it is this break through the cliff that makes the route possible. Just below the rim the trail goes through the first of two tunnels. About 30 feet above the trail just west of the first tunnel the wall and ceiling of an overhang are decorated with Indian pictures, in red clay, of deer and other designs. This protected ledge can be easily reached from above. Unfortunately vandals have added modern pictures using spray cans.

Indian Gardens, the oasis 4.5 miles down the trail, is recognized by its majestic cottonwood trees. Early pictures show that this grove has grown since the arrival of the tourists. Havasupai Indians used to grow crops here. Now the water from the springs is collected and pumped to the south Rim but still there has been a water shortage during the tourist season.

This will soon be alleviated by the pipe line bringing water from Roaring Springs as close to the north rim as Indian Gardens is to the south. The construction of the pipe line has been a multimillion dollar project with plentiful use of helicopters for transportation. The pipe is buried as much as possible beneath the trail and it crosses the Colorado under the new foot bridge. Just as it was about complete in December, 1966, came a remarkably wet storm. Several inches of rain fell on two feet of snow. For days as much water came down Bright Angel Creek as used to flow in the Colorado during the very low stage, 3500 cubic feet per second. Long sections of the north Kaibab Trail were swept away and the pipe line was wrecked. Rebuilding it took longer and cost more than the original job. It was the flood, not of the century, but of the millennium.

Along the Bright Angel Trail 1.5 miles and 3 miles below the south rim, drinking fountains are turned on during the hot season. Water is available and the comfort stations are open all year at Indian Gardens. Below the Gardens the trail forks, one branch going to Plateau Point where there is a spectacular view of the Colorado 1300 feet below. The other branch continues down beside Garden Creek and gets below the Tapeats Sandstone in a narrow gorge. A sign used to point the way to the base of the Tapeats west of the bed where one could find some ruins and also put his hand on an unconformity. The upper half of your hand will be on rock 500,000,000 years younger than the rock touching the lower half of the same hand.

The nonstratified rock of the inner gorge is commonly called granite although most of it is schist, greatly deformed, and metamorphosed sedimentary or volcanic rock. At the top of these Archean rocks Garden Creek enters an impossibly steep chute and the trail veers to the east. The old Devil's Corkscrew section of switchbacks still shows, but the modern route swings farther to the east as it drops to the bed of Pipe Creek. To get a quick idea of a really wild part of the Grand Canyon, go up the bed of Pipe Creek for five or ten minutes. One can even climb out of this forbidding narrows into the basin surrounded by the Tapeats cliff. Along the easy route to the Tonto Trail to the east an overhang shelters an Indian

pictograph and a miner's cairn points the way to the rough scramble through the Tapeats to the west. When you continue on toward the river down the Bright Angel Trail, note Garden Creek again as it falls to join Pipe Creek.

There is often a trickle of water in Pipe Creek but it usually disappears into the gravel before reaching the river. One hot and dry day I saw two men who had come down the Kaibab Trail and were going up the Bright Angel. They were digging for water in the bed and waiting for their shallow pool to clear. Just around the next corner were pools.

On hot days hikers often sit down in the Colorado at the mouth of Pipe Creek. This is refreshing, but one should use discretion – a few years ago an eighteen-year-old girl waded out too far and was drowned.

The original route from the south rim to Phantom Ranch was via the Bright Angel Trail, then along the Tonto, and finally down the lower part of the Kaibab Trail. More recently the spectacular River Trail was blasted from the solid rock to connect the lower ends of the two main trails. The new footbridge furnishes another cutoff on the way to the ranch, as it is no longer necessary for one to follow the River Trail east to the Kaibab Suspension Bridge.

On our way from the ranch to the Bright Angel Trail we once came upon bare human footprints. They continued all the way to Indian Gardens. There we overtook a hiker who had tried to swim across the river with his clothes and shoes in on one hand. In the middle of the river he had had to drop everything and swim for his life. Thus he was clad in underwear shorts until he could borrow more suitable attire.

It is 7.8 miles from the south rim down the Bright Angel Trail to the river and about 2.5 more to Phantom Ranch. The return by this route takes most hikers from five to eight hours. There is no water on the Kaibab Trail so it is preferable to go up the Bright Angel in hot weather. Even so, one should carry some water. Once I met a young Englishman on the steep trail above Indian Gardens. He confessed that he "was a trifle parched," and he handed my canteen back, a pound lighter.

Bright Angel Campground

After crossing the river on the new bridge, you pass some buildings belonging to the government and used by a maintenance man. One building is a lab for the engineer who takes daily samples of the Colorado water. To get these specimens he sits in a little car hanging under a cable above the middle of the river. Especially before Glen Canyon Dam was built, the river was very irregular in transporting silt. For years the rangers would tell you that the river carried one million tons of silt per day. Then without fanfare the rate was cut to half a million tons per day. The river still looks brown about half the time, when the Paria and the Little

Construction crew on river trail, c. 1935
NPS photo

Colorado are in flood. Most of the mud is trapped in upper Lake Powell and even when the entire river appears brown, a cupful is fairly clear. Many people feel no ill effects from drinking the water untreated, but there are also many instances of enteritis. Some kind of disinfectant seems to be indicated. The campground is provided with purified tap water.

The campground looks better if a person hasn't seen it before the superflood of December, 1966, which swept away all the willows growing beside the creek and cut away the terrace at the lower end of the area. No trace was left of the comfort station. Strangely, a rock pavilion thirty yards to the north was left intact. At present campers have to walk five minutes each way to reach the small facility that served the resident engineer down near the river.

Little or no wood is available at the campground but it may be carried with one at the end of a hike. Fireplaces are provided.

Occasionally one hears that it never rains at the bottom of the canyon. The air is supposed to be so warm that the drops evaporate before they reach the ground. This statement is about as reliable as the one that it is never winter along the river. Pictures of snow on the Kaibab Bridge refute the latter, and the plumbing was broken by freezing during the severe winter of 1948-49. Where the river splashes spray, I have seen the rocks coated with ice all through the day in January.

The rainfall at Phantom Ranch averages about eight inches per year and most backpackers don't bother with a tent. A light air mattress keeps me above the groundwater and I carry a big plastic sheet that will cover my sleeping bag on a rainy night. If there are only two or three people in the party they can often find shelter under overhanging ledges. During one short but vigorous shower I moved into the rock pavilion at Bright Angel Campground. This was better for experience than for sleep because the other people were playing a flashlight on a little skunk and a ringtail cat, who were appearing from a crack in the cliff behind the building.

To beat the summer heat near Phantom Ranch, try the swimming pool. It is open to the public and there are showers to take off the sweat and dust. Cold drinks can be obtained at the ranch if you arrive before eleven a.m. or late in the afternoon. It is unfortunate that there is more temperature difference between the rim and the bottom of the canyon in summer than in winter. The bare rock walls act like a reflector oven for the high summer sun.

The early visitors who wrote of the canyon bottom as being in a perpetual twilight with little sunshine, no birds, and hardly a green leaf were giving way to their fears. They let the fall of a rock, poor footing near a cliff, and the sight of a rattlesnake grow out of all proportion. My average is one rattlesnake in about forty days of walking, and this is mostly far from the main trails. One has almost as good a chance to see a bighorn sheep as to get near a snake. Only once during my more than 700 days

of canyon hiking has a rock fallen nearby. It fell with no warning – all I heard was the hiss and the thud as it hit the trail a yard away.

North Kaibab Trail

As you go up from Phantom Ranch to the north rim, there is no need to carry much water. Signs below Phantom Ranch warn against drinking untreated creek water, but I have never had any trouble. The stream is usually only a few yards away from the trail, and I have poured water down my back or dipped my shirt to cool off.

About 0.3 mile north of the ranch is the beginning of the Clear Creek Trail. It switchbacks to the base of the Tapeats Sandstone and then levels out above the river before getting through to the Tonto Plateau. The views up and down the inner gorge are rewarding even if you go no farther.

Farther north along the main trail one goes through an impressively narrow corridor in the granite. The junction with Phantom Canyon is about a 45-minute walk from the ranch. The flow of this creek is perennial but much less than Bright Angel Creek. Fording the main creek can be a problem during the high water of late spring or after a summer storm. Progress is easy up Phantom except where one passes pools. Either wade or crawl along the smooth sloping granite. At the end of this granite gorge there is a waterfall in the Tapeats, that can be bypassed by a short rock climb about 30 yards east of the fall on the south side. In May the open valley above is a wild flower garden. Excursions up the two arms of the canyon will reveal the complicated geology, Indian ruins, and at the end of Phantom in the Redwall is a narrow slot beneath a fall. Near the lower end of the valley on the north side is an overhang which has been used as a campsite. Before this was a national park, cattle were left here for winter pasture and E. D. McKee tells about a lone steer that lingered after the last roundup.

There are two other somewhat easier routes to the open valley of Phantom Creek. One can go up the scree and granite slope from the north end of Bright Angel Campground. From the ridge one can see the break in the Tapeats, then proceed along the Tonto Plateau to the saddle east of Cheops. One usually runs into a slight trail from there down into Phantom Creek Valley. The third route is direct if you were coming down from the north rim, and it is the only trail possible for stock. About a half mile downstream from Ribbon Falls cross the creek and you will find an obscure trail going up to the Tonto Plateau and then around into Phantom Canyon. It comes down into the valley near the old camp under the overhang.

Let's come back to the main trail and continue upstream. It is easy to see why bridging the creek crossings has always been difficult. When

this route was pioneered by prospectors and the surveyors under Francois Matthes, it was necessary to cross the creek 99 times. During the extensive trail work of 1928 the route was improved so that there were only seven creek crossings. At first loose boards were propped up on stepping stones and these were replaced after each flood. Then suspension bridges were supported a few yards above the water, but big floods would wash these away. Steel beam bridges were then tried, but the superflood of 1966 took these out too.

About 5.5 miles north of Phantom Ranch a spur trail leads west to where Ribbon Creek comes out of a slot high above and spatters down on a mossy tongue of travertine. Cool off by jumping behind the veil of water. Or one can climb up beside the travertine and walk behind the fall. The light is often poor and a good picture of Ribbon Falls is a prize.

A fine side trip is the visit to the valley above Ribbon Falls via the trail that leaves the main trail about 100 yards north of the Ribbon Falls spur. This trail leads to Upper Ribbon Falls. To the south, at the base of the cliff, are a number of Indian ruins. Farther to the southeast is a route by which you can scramble up to the more remote valley above the upper falls. Views of the surrounding peaks are inspiring. One gets the feeling of being in a remote area although in an hour he can be back on the main trail.

Cave explorers talk enthusiastically about climbing up into Wall Creek, another good tributary of Bright Angel Creek. Another fine side trip is to go up the slope south of Wall Creek to a break in the Redwall south of a promontory. Careful route finding will get one to the top of Deva Temple. This is a non-technical ascent, but I spent 10 hours away from Bright Angel Creek on the round trip. From the saddles to the north and south of Deva there are routes down to Clear Creek. One can also go to the north rim by following the Hermit Shale over to Obi Canyon and then up.

Some interesting petroglyphs and pictographs are at the base of the Coconino just west of Obi Canyon. R. C. Euler, using a helicopter, found some ruins halfway through the Supai Formation on the southeast side of Deva, and there is a spring nearby. I found a way through the Redwall on the north side of Brahma. The ravine is narrow and steep and I had to go behind a big chockstone through a hidden hole.

A landmark on the main trail is Cottonwood Camp, a ranger residence which is used occasionally by trail workers. Branching off to the northwest a bit upstream is The Transept, another tempting detour. When I was there in late May little streams were splashing over high falls. Ouzels and wrens added to the magic of the ferns and redbud trees. I could climb the Redwall in the east fork at the end of the canyon, and a better climber has gone up the Redwall in the other fork. At the north rim they tell of two girls who were startled while getting an all-over suntan when a man appeared over the rim of the Coconino, 500 feet below

the campground.

Up Bright Angel Creek from The Transept is an east side tributary, Manzanita Canyon, a fine place for further investigation. A high school boy is said to have found a route up this canyon to the north rim.

The buildings at the junction of Bright Angel Canyon and Roaring Springs Canyon were built to supply water and power to the north rim settlement. Water came down through a wooden penstock to run a generator. An engineer lived here all summer.

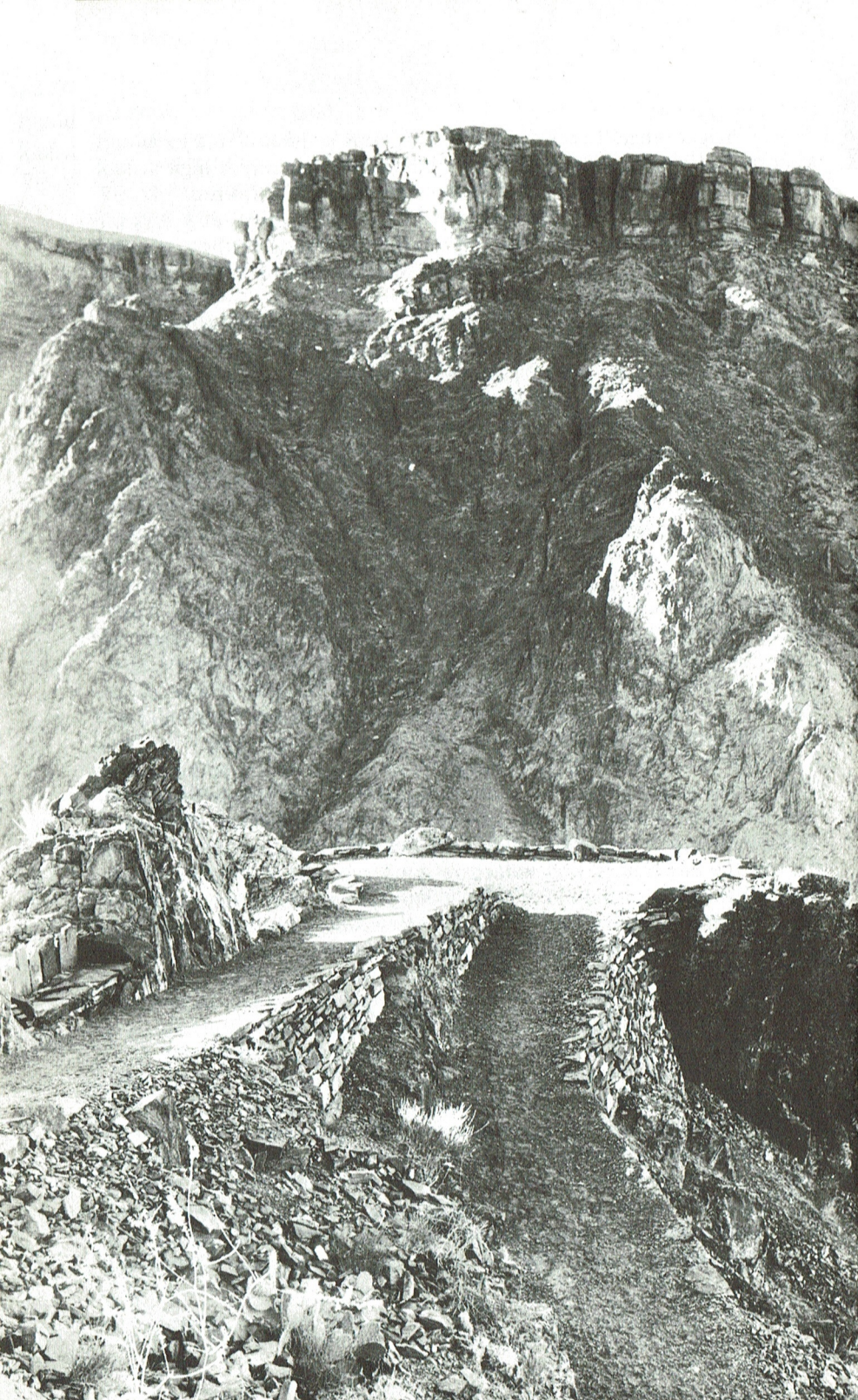
The creek from Roaring Springs is by far the largest tributary of Bright Angel Creek. The cave from which the water flows has been surveyed and has 11,000 feet of passages. The cascades below the cave put on a fine show and the roar of the water is easily heard by tourists at Bright Angel Point on the rim thousands of feet away. This is the water that will be taken by the pipe line over to the south rim village. The Kaibab Trail goes up the canyon across from the falls. A particularly spectacular section was blasted out of the face of the cliff. The finest pictures of the upper section are taken in autumn showing aspens and maples in their glory.

Travel on the Kaibab Trail is done for various reasons. Allyn Cureton, who had been over the route several times, decided to set a speed record. He walked and ran the entire 20.6 miles of the trail from the north rim to the south in 3 hours and 56 minutes. He and others have crossed the canyon from the south rim to the north and back in much less than 24 hours. If, however, one wants to see all the interesting detours and enjoy them, two weeks may be spent in this one area.

Another fine side trip is up Bright Angel Creek to the source and a little farther. One encounters a fine fir forest at this relatively low elevation. There are beaver cuttings and fishing is fine. Well below the source of the main creek, the Old Kaibab Trail branches to the northwest. Near the top the old trail is well hidden in the scrub oak. I have also come down to this part of the old trail by following the valley from where the Point Imperial branch of the scenic drive leaves the Cape Royal highway. It is all marvelous wilderness.

Clear Creek Trail

As was noted above, this trail leaves the Kaibab Trail 0.3 of a mile north of Phantom Ranch. It is 8.7 miles over to Clear Creek, the first sure water supply. This trek takes fast hikers less than four hours but heavily loaded backpackers have taken as much as eight. The first section of the trail leading from Bright Angel Creek to the top of the Tonto Plateau is well preserved. The whole trail is being used more in recent years and there is little chance of losing it. The only water that is sometimes found along this trail is in rain pockets in the wash between Sumner Point and



Zoroaster Temple, but this is too near the beginning of the trail to be of much importance. It would be a good place to camp before attempting the ascents of Sumner, Brahma, or Zoroaster. The ravine through the Redwall at the base of the ridge leading to Sumner Point can be climbed. The assault on Zoro requires the use of pitons and bolts. An old cairn on Sumner shows that it was climbed long ago, but Brahma was first climbed after Zoro.

If you think that the Clear Creek Trail is long and tedious, remember the Kolb brothers and also the three rangers who came over here in 1928 without any trail. The Kolbs were interested in photographing Cheyava Falls on the east side of the longest arm. Twice Emery, with different companions, made his way upriver to Clear Creek, and once Emery and Ellsworth Kolb came overland.

The rangers in the early days seem to have had more time for discovery trips than they do now. These three reported that the stream is permanent and would support fish. They also found the Indian ruins high on a ledge south of Cheyava Falls and those against the cliff west of the junction of the long arm and the one containing the most water. They were young and gay and Glen Sturdevant wrote in a humorous vein concerning their failure at cooking mescal and keeping warm at night. Tragically Sturdevant and another ranger drowned within the year, trying to pass Horn Creek Rapid with a light boat.

On my first trip to Clear Creek I was surprised to see how far the trail stays on the Tonto level before it finally goes down to the bed. It passes Zoroaster and most of Brahma before it comes to the right break. Here one can leave the trail for an interesting detour. A deer trail goes over the ridge and down into a valley whose head is the saddle between Brahma and Deva. After I had been stopped by the Redwall in the southwest arm, I ignored a better chance in favor of the upper end of the valley. Here there are at least two possibilities but I chose the narrow ravine going up to the south toward Brahma. At one place two or three huge chockstones form a 25-foot overhang, but I was able to wriggle through a narrow hole behind them. Al Doty got up here without finding the hole on a one-day hike from Clear Creek to the top of Deva and then to Bright Angel Campground via the Redwall rim west of Brahma. This is also a route to the Indian ruins and spring in the middle of the Supai Formation on the southeast side of Deva.

Many other fine side trips are possible. Going down to the Colorado is one. There is an eight foot fall at a chockstone barrier but it can be bypassed on a sloping ledge of polished granite. There are no handholds so rubber-soled shoes are the key. Walking is easy along the gently sloping gravel, but don't be caught by a flood. The walls go up nearly straight for quite a distance. As in so many of the Grand Canyon tributaries the lower bed through the hard Archean rock is more meandering than it is in the higher valley. Why is this? I also know several instances of an-

Clear Creek Trail
NPS photo

other anomaly. Where a streambed has been going straight along a fault line between the hard Redwall on one side and the Supai Sandstone on the other, it suddenly takes a short plunge into the hard rock. After a short meander through an awesome narrows it emerges and continues in the logical bed. Clear Creek at the very end becomes quite straight. Parallel fins of schist project into the river causing turbulence and making it almost impossible to moor a boat here.

An interesting return from the river can be via the Tonto Plateau east of Clear Creek. One can follow the rough rocks along the bank upriver for a few hundred yards to a beach where early river parties camped. Then scramble up the steep granite into a ravine to the east and out on top of the Tonto. Either side of Howland's Butte is all right. A deer trail goes down the bed of the ravine heading northwest from between Howland's Butte and Angel's Gate. Before reaching Clear Creek, you come to the tributary from south of Cape Royal. It has another spooky narrows through the quartzite and Tapeats. Merrel Clubb told me to watch for an Indian ruin on a high ledge on the south side in the quartzite; but I have looked for it twice without success. The valley above, hemmed in by Wotan, Cape Royal, and Thor Temple, is most inspiring. The Redwall is the absolute barrier, but I wish I had had more time to go north behind Thor.

As you cross the terrace just north of the junction of this canyon with Clear Creek, watch for the mescal pit. This is a low mound of small rocks about 20 feet across and hollow in the center where Indians used to roast century plants. They last for hundreds of years and sometimes one can find bits of charcoal in them.

If you have just come down the Clear Creek Trail, the usual impulse is to go upstream rather than down. Most visitors would like to see Cheyava Falls, the highest in the entire Grand Canyon. In the long northeast arm, it comes from a cave about one fifth of the way down the Redwall cliff. Very rarely is there a good flow; mostly the fall is just a wet streak down the wall. Ellsworth Kolb entered this cave twice. He and his brother Emery came down from the rim by a very rugged route. At one place they even lassoed a tree and used the rope to get over and climb down the tree. At the rim of the Redwall they built a windlass and Emery let his much heavier brother down the wall. Interrupted by a terrific storm, Emery tied the rope securely and sought shelter while his brother had to endure it. When it was over, the ropes were so badly twisted that Ellsworth couldn't be raised or lowered. Neither could he touch the wall of the overhang so Emery lowered him a pole to push against the wall and get untangled. After discovering a wall in the cave, Ellsworth came back with a ladder. A little farther on he was stopped by a deep pool. Three parties of cavers have repeated this exploit but they all used modern methods of rappelling.

When the rangers in 1928 found the dwellings south of Cheyava Falls, they leaned a log against the cliff and climbed up to inspect them. Later climbers have used a rope to come from above. It is interesting to see the rest of this canyon up to its head in the Redwall. In the spring while the snow was melting we found a 400-foot free fall at an overhang in the Redwall. There is a fine detached pinnacle and a couple of barriers in the bed with adequate bypasses. Using a bit of agility at a chockstone, one can scramble on to the top of the Redwall. With patience and enough water, one could probably go south and find a route through the Supai Sandstone and go on to the top of the Walhalla Plateau.

Returning to the junction of the long northeast arm and the north arm, one should look for some more Indian ruins. They are strung along the base of the west wall opposite the Cheyava Falls arm. At the best of these is a sheet metal tag with the inscription "Surface collection by Gila Pueblo." Nearby is a fine overhang that would protect several sleepers on a rainy night. Packrats like to bring cactus spines into such places, so check well before putting down your air mattress.

A walk up the wet arm of the creek, past the cascades and fern-bordered pools, is a must. Pushing through thickets is slow, but you finally come to a 30-foot fall in the shale. One can get around this to the west. Watch for a cave near the base of the Redwall to the west. It is accessible but the route takes a bit of study. Here, in the thirties, the CCC boys found split twig figurines. They have been dated by radioactive carbon and they prove that men were here over 3000 years ago. Cavers have traced Clear Creek to its source but have found no other cave.

Another interesting day can be spent going out of Clear Creek up the tributary that comes down from north of Deva. When we saw the Redwall ahead we felt so sure that we would be turned back that we put down our lunches and canteens. We went on just to say we had slapped the wall at the last hand hold, but were surprised that we could go on and continue right up through the Supai too. Clubb and Wing had already found a way down from the rim through Obi Canyon to the Deva Saddle. I have found quite a variety of Indian petroglyphs and pictographs at the bottom of the Coconino just west of Obi Canyon.

Clear Creek is worth seeing even if one has only a day to come over from Bright Angel Creek and return. Still it would be far better if you had a week here to check the attractions. There is water in all the main arms below the Tapeats, but for day-long trips at the higher elevations, water should be carried. During the cool season one can go along the Tonto from Clear Creek to Vishnu Creek and beyond. This would be punishingly strenuous and would require heavy canteens in the summer.

According to a legal notice in the Flagstaff courthouse, John Hance was planning a trail from the mines in Asbestos Canyon to Clear Creek, but only a little of his trail shows after eighty years.

Grandview Trail

When the Grand Canyon was becoming known the rim from Grandview Point to Moran Point was more popular than the present village area. John Hance had developed two trails, the earliest between the Sinking Ship and Coronado Butte and the other east of Coronado Butte. Copper was found at the base of Horseshoe Mesa and by 1892 Pete Berry was building a trail to the mines. Most of the route is cut into the clay slope or along rock ledges, but at two places they had to construct cribs of logs wired to the face of the cliff. Between 1950 and 1970 sections of retaining wall have fallen away. Most of the trail is still in good shape, however, and this section is becoming increasingly popular among hikers. The scenery may have been as strong an attraction to the miners as the ore, and the former is as fine as ever.

Before there was the El Tovar Hotel at the village, the Grandview Hotel stood near the head of the Berry Trail to Horseshoe Mesa. Stagecoaches with relays of horses brought tourists from Flagstaff in a single day. With a mule train bringing water from the spring 3000 feet below, the enterprise was a leader in the tourist business. Then the railroad was put through to the present village area. The mines also became unprofitable and the old trails are left to wilderness seekers.

The map shows how to start down the trail. The only time that one might lose the trail would be in late winter when it is under two feet of snow. A vestige of the original Grandview Trail forks to the south from the present trail near the bottom of the Kaibab Formation. It contours along the east side of Grandview Point going to the rim not far from the old hotel site.

An impressive amount of trail construction is seen in the Coconino where the trail was paved with rock fitted edgewise. Looking down Grapevine Canyon to the northwest one might think it would be simple to walk right through the Redwall. It is an interesting route, but there is hand-and-toe climbing in the lower third of the Redwall. Some care is also needed to find the route through the Coconino directly below the trail, but Indians and prospectors must have known this route. An unbroken prehistoric pot was found in a shallow cave below the Redwall rim to the northeast and there is a miners' camp still farther east.

One spring day I saw what appeared to be a peach orchard in bloom down in Grapevine Canyon. I soon realized that I was looking at the finest grove of redbud trees I have ever seen. A trickle of water in the Tonto section supports a dense stand of wild grapevines. Some have said that the name was given this canyon because the rapid at its mouth is a tangle of rocks, but it is more likely that it comes from the actual vines above the Tonto Trail.

Coming back to the main Grandview Trail, we can look down through a notch at the bottom of the Coconino into the west arm of Hance Canyon. The apparent ease of descent here to the southeast is not deceiving. You can readily go down and cross the valley. It is also possible to find a way through the Redwall on the other side and climb out of the canyon south of the Sinking Ship.

There are a few places where slides have hurt the trail, but one should still be able to reach Horseshoe Mesa and the mines in less than two hours. The shafts go far beyond the limit of daylight, so lights are needed for their exploration. Use care, because one vertical shaft drops just where daylight ends. The longest shaft is probably one along the trail off the east side of the neck going to the mesa. From nearby a spur trail goes south to a spring below the Redwall. The miners carved a neat basin in the soft shale. There is a lot of algae in this pool but it is the nearest water to the old mine shacks on the mesa. The trail continues down to the east and joins the Tonto Trail at the rim of the Tapeats Sandstone.

Directly north of the mine shacks is Horseshoe Mesa Butte, a ridge of red sandstone. When we first climbed it I had to accept a boost from a tall companion, but we found two old cairns on top. We came down a different route at the east end. The trail north of the mine area is clearly shown on the map going west of the butte.

A spur goes west below the Redwall rim to a fine cave which is by far the most accessible of all the caves in the park. It has good stalactite decorations and 1100 feet of passageways have been mapped.

The main trail continues north and descends to the Tonto inside the west prong of the horseshoe. One can cross the Tonto Trail near the rim of the inner gorge and go down to the river at the lower end of Sockdolager Rapid.

Instead of going down to the foot of Sockdolager, one can turn east at the base of the Tapeats and go down into Hance Canyon. It is only a steep scramble down to the junction of the side canyon and the Colorado. The beginning of Sockdolager is at least as impressive as its lower end. The Old Hance Trail comes down Hance Canyon but this is much more difficult at present than the route described above.

Back on the Tonto level, follow the old trail around into Cottonwood Canyon west of Horseshoe Mesa. Water is sometimes found in the bed near the Tapeats but if not, there is always water in the west fork of the south arm. Near this spring are signs of a former camp, a wooden floor and some piping. Perhaps the Grandview Hotel people came here for water. O'Neill Spring, shown on the map south of the trail up the west side of the mesa, cannot be trusted. Neither can the spring on the map in the west arm of Cottonwood.

There are several ways to the river near the mouth of Cottonwood Creek. A ravine on the east side cuts through the Tapeats well north of

the Tonto Trail. One can get through the same cliff in the west arm where the Tonto Trail crosses. In either case, follow the base of the Tapeats along the west side of the canyon until near the slope down to the bed near the river. There are several impassable falls in the bed higher up. A third route is to stay on the Tonto Trail until it turns west away from the rim of Cottonwood. Here the extension of the Grandview Trail to the river cuts through the Tapeats. One can go east just below the Tapeats and get to the bed of Cottonwood as before. In the bed you can stand at the lip of a 60 foot fall and look down at the river. Backing away a few yards you can climb over a low wall and walk down a talus to the river.

The trail through the Tapeats west of Cottonwood was shown on the Matthes-Evans East Half Map continuing down to the river away from Cottonwood Canyon. Several of us were convinced that this was an error until I read the map more carefully and made allowances for a section of the trail that had fallen away. The trail became distinct again and at the bottom I duplicated pictures from the old books.

Following Grapevine Canyon to the river is another project. The springs shown on the map can generally be trusted and there should be more water up Grapevine above the Tonto Trail. One can get down through the Tapeats just west of the springs. Grapevine in the Archean rock is free of barriers until one is near the river. A major fault accounts for the general alignment of Grapevine and Vishnu Canyons but the lowest part of Grapevine veers away to the west. One can, rather precariously, bypass the falls on the left. However, at the very end there is a drop of 15 or 20 feet into the river. Where the bed turns away from the fault one can climb up and over to the river. When Allyn Cureton and I did this we found something modern. Under a slight overhang was a box containing some old clothes and some pop bottles. Near them on the top of the spur newspapers had been folded and weighted with pebbles to spell the word "NO." We guessed that some river adventurers had given up a river trip here. The message was to tell aerial searchers that no help was needed.

Boulder Canyon, west of Grapevine, has been tried as an access to the river, but good climbers have been baffled here. If the Lonetree Canyon spring is dry look for water in the bed below the Tapeats. The archeologist, R. C. Euler, using a helicopter, found some Indian ruins on the west side of Lonetree where the hanging valley meets the inner gorge. Jim Sears was able to climb down to the river west of the high fall.

If one were to go down the Grandview Trail and along the Tonto to the Kaibab Trail without any detours, two days would be a safe time allowance. In very hot weather or if the springs were dry, this route is dangerous. The experience of the river runner trying to walk from Hance Rapid to Phantom Ranch in one day is one example. Another

nearly tragic case involved two young men whose hiking had been done in cool mountains. They each carried a 60 pound pack including everything, even parkas and a camp axe, but they had only a quart of water apiece. They couldn't find water and threw away everything, empty canteens and even expensive cameras. One panicked and insisted on trying to go down Cremation Canyon to the river while the other continued and finally reached Phantom Ranch. The desperate man slid down a chute in the granite and was trapped by some stagnant water. He was found and pulled out several days later.

In the upper end of the east arm of Cremation, one can climb into the figurine cave and there is also an easy route through the Redwall. Pattie and Lyell Buttes are possible but a thrill to climb without hardware.

Back in Cottonwood Canyon are more attractions. There is a horse trail at the end of the west arm and a possible scramble up through the Redwall to the top of the promontory dividing Grapevine from Cottonwood. The miners' camp is about halfway between the heads of these two routes at the top of the Redwall. One can climb down to the spring in the wet arm of Cottonwood from the west, but the route isn't a bit obvious. It is easy to see the route through the Redwall on the spur separating the two forks of the south arm. There are numerous routes through the Redwall along the rim of Horseshoe Mesa.

Not to be confused with the cave reached from the trail along the top of Horseshoe Mesa is a cluster near the bottom of the Redwall north around the corner from the trail down the west side of the neck. A branch of the trail ends at the foot of a scree slope up to the caves.

Hance Trail

John Hance and W. W. Bass were outstanding Grand Canyon prospectors who came about 1882 and spent the rest of their lives in and near Grand Canyon. They built trails and operated mines, but eventually both found the tourist business more profitable. John Hance chose the scenically superb eastern part of the canyon while Bass developed a section far west of the present village.

Hance first built the Old Trail down the east arm of Hance Canyon, merely improving an Indian route. It is not shown on the map but its head is at the first viewpoint with off-the-road parking east of the paved pcinic area where the map shows Buggeln Hill. The Hance Ranch buildings and the old Buggeln Hotel, now torn down, were in the woods to the south. The top 50 yards of the Old Trail are still in good shape but below this trail head you use your own judgment. In general, keep to the west side of the ravine until you are through the Coconino and then cross east and descend through a juniper covered slope. Cut trees and

vestigial retaining walls mark the trail as you near the Redwall. It goes into a wash just east of a big cairn set on a prominent rock. Just before this wash meets another from the west, leave the bed and skirt the base of an impressive pinnacle of limestone. The trail soon leads back into the bed at the base of the Redwall. There are no further obstacles until one is deep in the Archean rock.

In a ravine from the right below the Redwall is a fairly reliable seep spring. Near this under some cottonwood trees Hance built a rock cabin. Now both the trees and the cabin are gone, presumably taken out by a flood, with only a picture in an old book to remember the place. On higher ground nearby are the rock walls of a corral. Hance would take his clients to this cabin the night before their big trip to the river and back. Fast hikers can cover more ground than this in a day. Without the help of a maintained trail Allyn Cureton and I went down the route to the river, returned to the rim via the Grandview Trail, and then walked back to the car at the head of the Old Trail in one day.

At the first outcrop of Tapeats Sandstone on the west side of the wash there is an overhang where the wall is coated with hard clay. Visitors between 1885 and 1895 carved their names and dates in this clay. Tourists also wrote their remarks and names in the guest book at the Hance Ranch. Bucky O'Neill recorded his visit with the sentiment "God made the canyon and John Hance the trails. Neither would be complete without the other."

Deep in the Tapeats is a small but permanent stream. Here an alcove used to be called the Temple of Set. Down in the granite, before the bed plunges over the first fall, there are routes to the Tonto both to the east and to the west. Wild burros used to be numerous in this section and maintained trails. Hance could lead his tourists down past the falls using fixed ropes and ladders. One now has to bypass these barriers by going over spurs that project from the canyon walls. My system takes me out of the bed three times, alternately to the east, the west, and then the east. These are rather ruggd scrambles and one needs to be psychologically as well as physically prepared. The reward at the end is a fine view of Sockdolager Rapid.

There are the usual detours away from the Old Trail. From the rim one can go over to the Sinking Ship. A trail loops around its base and one may note some well-preserved ruins north of the middle on the east side on ledges above the trail. Routes to the three southern summits of the Sinking Ship are hard enough to be interesting. The lower north summit seems to need hardware. One can get down through the Supai on the east side of the Sinking Ship and follow the Old Trail to the junction of the two arms of Hance Canyon. One can return to the rim via the west arm and the ravine leading to the saddle south of the Sinking Ship.

From where the Old Trail meets the Redwall, one can go up to the saddle south of Coronado Butte. Some Grand Canyon buffs prefer this

Coronado from the north

route to the regular Old Trail. Coronado Butte has been climbed, but it is more difficult than the Sinking Ship. One can walk along the east base of Coronado, but the west face is sheer.

Some hikers along the Tonto Trail east from Hance Canyon have been far down Mineral Canyon. This is difficult and the usual route stays above the inner gorge. The Tonto Trail slopes down to the beach at Hance Rapid. If you meet a man who claims to have walked through the canyon from the Little Colorado to Supai, you might ask him whether he stayed on the Tonto Trail all the way. If he has even studied the map he should know that this long trail starts at Hance Rapid and ends at Garnet Canyon, far short of Supai. Hance Rapid, since it is studded with rocks, is far harder for the rivermen than is Sockdolager.

New Hance Trail

This trail is shown on the map but there is no clearcut parking for it. About a mile southwest of the turnoff to Moran Point a faint car track goes through the juniper forest to it but this is usually blocked by a scattering of dead trees. If you walk along this track and go to the left down the first draw, you will come to a cairn marking the start of the trail. If this takes more than six or seven minutes, you have overshot the mark. Since the Old Trail isn't well known and was destroyed by a storm in 1895, this trail is usually called the Hance Trail. All confusion would be avoided by calling it the Red Canyon Trail. On it Hance could let his tourists ride all the way to the river. It also served the asbestos mines.

The trail is still quite clear down to the base of Coronado Butte, but don't panic if you lose the trail temporarily in the Supai Formation. Hikers have put up more and more cairns in recent years, but there are still problems in route finding. It is still worse along the rim of the Redwall where it has to head several ravines. Consulting the map here is a real help.

Dan Davis and a companion spent a couple of hours trying to locate the right place for the Redwall Descent. Although he had been over the trail three years earlier, he gave up the search and went down the Redwall by a deer trail much nearer to the head of the gorge. We once had several close approaches to a bighorn ram until it went down this route. There is water in the bed at the bottom of this descent, certainly an advantage not shared by the regular trail.

The place where the horse trail starts down is marked by cairns and some old lettering painted on the side of a big rock. In the talus below there are several ravines and a net of wild burro trails. The map is use-

ful. After the trail crosses a tributary from below Moran Point, it slopes down into the bed of Red Canyon and stays there.

Hidden in the mesquite east of the wash and about 75 yards from the river is an old camp. The clutter of trash shows that it must have been used for some time. It was an overnight stop for the miners who were bringing asbestos from across the river up to the south rim. There was also a three-day trip for tourists with stops on Horseshoe Mesa and at the mouth of Red Canyon. The Grandview, Tonto, and Hance Trails were all in good shape for riders and accommodations were available on Horseshoe Mesa and at Hance Rapid. Since 1910 the wilderness has reclaimed its own.

The crossing to the asbestos mines was by boat below the rapid. During the early summer the current was dangerous so that the Ferry must have operated only at the low stage. The trail on the north side slants up along a ramp made by an ancient intrusion of lava. From Hance Rapid one can see the tailings in front of a big shaft high on the slope. The trail goes below this tunnel, around into Asbestos Canyon. If one has a way to cross the river it is interesting to visit the ruins of the miners' camp, the shacks with buckets and other debris around. Trails lead from the camp to mines high above the river to the west. I tried to go up the main bed but was stopped by a high dry fall. Some students found an old trail to the west of the fall going into the upper valley. They also found a spring but it is away from its map location by a half mile. I have entered Asbestos Canyon from both east and west and I found that the steep ravine southwest of Sheba Temple is a safe access route.

Tanner Trail

The original Tanner Trail left the rim west of Cedar Mountain across the bay from Desert View. All but the top hundred yards are gone but one can still follow the route. Below Desert View the trail goes around to the west along the rim of the Redwall. It is also possible to intercept this old trail leaving the rim just north of the Watch Tower. There is a rough scramble down a ravine to the west. The route, still marked by some cairns, crossed the west arm of Tanner Canyon near the fall over the Redwall. In the bed is a large rain pocket that may be reliable as a water source. At this pool George W. James and his companions on foot met a well armed group of men who were driving some horses across the canyon. They had heard rumors of thieves who took horses from near Kanab, Utah down into the canyon where the brands were altered, before they were driven to Flagstaff and sold. James hid his suspicions and tried to be friendly. The thieves accepted the proffered whiskey, but still took the horses that James had left at the trail head.

The present Tanner Trail is shown on the map. Park off the highway

along the approach to Lipan Point. The head of the trail is quite distinct and it is marked with the usual sign "Trail not maintained. Permit required." It descends sharply through the upper formations, but there are only a couple of places that would be hard for a horse. Contouring below Escalante and Cardenas Buttes seems tedious, but it takes only an hour to do this section. Their accessibility makes these buttes attractive climbs. The rain pocket would be quite a detour, so carry water for the estimated 12 miles to the river. Another water source is still father from the trail, a seep in the shale below the Redwall in the southeast arm. Coming back from the river on a hot day can be quite fatiguing and one should allow six hours or more with canteen water to match. The heat of summer, if canteens go dry, can be fatal. Here in 1959 a man and two boys attempted to go to the river and back in one day with only a bottle of water. They reached the river but were benighted before they had reached the Redwall on the return. They wandered around in the lower valley during the night. By the middle of the morning on Saturday they decided to go back to the river for water, but it was too late. The man, deranged by thirst, insisted on trying to climb down an 80 foot fall. He soon lost his grip and cartwheeled to his death on the rocks. The boys, backing away, found a bypass to the bed below the fall. One couldn't go on and died only 45 minutes walk from the river. The other reached the river and waited for help until Sunday morning. When no help seemed to be coming, he tried holding to a driftwood log and floating to Phantom Ranch. Almost drowning in Unkar Rapid, he continued as far as Hance Rapid. Ahead he could see the river entering the granite and realized that he would never survive the next twelve miles to the ranch. By this time a helicopter was searching for him near the Tanner Trail. He tried to go back upriver, built signs on the sandbars and finally, just as the search was to be abandoned, was found. He had been able to go upriver a mile and a half.

There is an interesting prehistoric Indian route going north from the Tanner Trail over the pass between Escalante and Cardenas Buttes. I found a bit of pottery on the north side of the pass.

One can angle to the right through the Supai and continue down an easy ravine through the Redwall. You still go north along the Tapeats to a break on the west side of the promontory. The basalt can be descended to the north and from here there are various ways to reach the river. This is the most direct route from the rim to an Indian ruin on the hill south of Unkar Rapid.

From the regular trail at several places below the Redwall one can see to the west a natural bridge. We followed the top of the Redwall around the bay and got down beneath the bridge. We also were able to get down the east side of the promontory just north of the bridge. The Tapeats is also broken on this side but as there is no way through the basalt, we had to contour east over to the regular trail. The lower part of the Tanner Trail through the red shale is narrow but safe enough. It was never main-

tained by burros in this section of the park, and for some reason even deer seem to be rare. However, more and more hikers are using it and it should remain distinct.

There is no longer any clear, trail upriver, but it is easy to find a way behind the hills or just above the mesquite. About a third of the way to the mouth of the Little Colorado was a low water ford where horsemen crossed. Stay near the river to the mouth of Lava Canyon. One could go north along the Butte Fault west of Temple, Chuar, and Kwagunt Buttes. It is tiring but not otherwise difficult to cross Carbon, 60 Mile, Awatubi, Malgosa, and Kwagunt Creeks before reaching the Nankoweap Trail. This was the cross-canyon route of the horse thieves.

Between the Tanner Trail and the mouth of the Little Colorado at Palisades Creek is a copper mining area. The miners lived in a cabin made of driftwood, and the usual trash is still there. The mine shafts often have a few inches of mineralized water on the floor. If you explore the long and branching shaft, watch out for bad air. Toward the end we noticed that our candle flame was only a third as high as it had been at first. Both Allyn Cureton and I had headaches for the next hour.

At Palisades Creek one must decide whether to go high on a slope above the bluff or follow the narrow bench along the river. The latter pinches out about two-thirds of the way to the Little Colorado but when you can go no farther, you are at the source of Hopi salt.

Until about 1912 the Hopis came as pilgrims to this place. It was a religious observance with many rituals. Entering the Little Colorado Canyon through Salt Canyon 6½ miles from the mouth, they had to use a rope for the last 20 feet to the bank of the Colorado. The salt is in the form of stalactites and stalagmites in shallow caves. I recognized this as the right place when I came down from above and found the peculiar knob of bedrock where the Hopis fastened the rope.

From Palisade Creek the route to the Little Colorado goes along the bluff about 200 feet above the river. Known as the Beamer Trail, it was improved by Ben Beamer, a prospector who build the rock cabin on the south bank of the Little Colorado a few minutes walk from the junction. He must have expected to stay some time and grow things on the terrace near his house because he brought a plowshare in with him. Powell spent several days here in 1869, twenty-two years before Beamer, finding an Indian ruin. From the sherds in the soil near the Beamer cabin one can infer that Beamer destroyed the ruin to build his cabin.

The Little Colorado at Cameron is dry about half the year. At these times the entire flow at the mouth is from clear blue springs. This permanent water starts 21 miles up from the river, but by far the largest spring is 13.5 miles from the mouth. This mineral water is fit to drink but the test is not appealing. It covers the bed with a filmy white cream. Even the shallow pools seem to be pale blue and the deep lagoon at the mouth is a much deeper blue than the sky.

When the Little Colorado is not flooding, it is simple to walk up the bed. One can ford the stream when the walking seems easier on the other side. About 1.6 miles upstream there is a break in the north wall. Don't use the bed of the gorge, as it blocked. Go up the shale on the west and around a corner into a ravine through the Redwall. Going north up the steep valley is right, but near the top one turns into a narrow slot. The top 300 feet require use of the hands. An Indian told an acquaintance of mine about this route but he predicted that white men wouldn't like it. Powell wrote that in 1869 his brother Walter spent a day in going to the top and back. This must have been his route.

About 4.5 miles up the Little Colorado from the mouth is a travertine cone formed from the minerals of a little bubbling spring. This is the original Hopi Sipapu, the reputed route from which the progenitors of the human race issued from the underworld. At 6.5 miles from the mouth on the north side is Salt Trail Canyon. The trail is now marked by many cairns and is an easier way to reach the rim than the Walter Powell route.

Melvin McCormick, who helped his father mine copper at Palisades Creek and occasionally look for the fabulous lost gold mine of John D. Lee, said that they used to swim the horses across the Colorado north of the mouth of the Little Colorado. From there a man on foot can go along the bank and climb out at Malgosa Canyon. Or he can continue along the bank to the easy creek beds of Kwagunt and Nankoweap. There are Indian ruins all through this eastern part of the park, particularly in Nankoweap, Kwagunt, and Lava Canyons. The occupation was mostly from 1050 to 1200 A.D. and the dwellings are only well preserved if they were built under overhangs. Most of them by now are only outlines of rocks with some sherds lying around.

Hermit Trail

This formerly popular trail leaves the rim at the end of a service road behind Hermit Rest. It was built for the tourist trade by Fred Harvey and was maintained by the park service until 1931. Accommodations were maintained during the season at Hermit Camp, less than an hour's walk from the river. Just off the Hermit Trail at the foot of the Coconino is a spring and Santa Maria Spring is reliable. Dripping Springs keeps its basin full, but this is a mile and a half to the west of the Hermit Trail. Especially during the spring of the year this is a beauty spot and a bird lover's paradise. As shown on the map, the trail continues past Dripping Springs and goes up the Coconino to the northeast. Then it swings to the south and reaches a road end.

Watch for fossil footprints beside the Hermit Trail at a certain depth in the Coconino Sandstone. Found at many places in Grand Canyon in the same formation, they were first studied by scientists here. They were

formed by the feet of reptiles and amphibians about 300 million years ago. Unfortunately no fossils of the entire animals are ever found. The prints range in size from insect tracks to some that are eight inches long, but are not to be confused with the dinosaur tracks in the Painted Desert left some 60 million years ago.

Just north of the Junction with the Dripping Springs Trail, you come to the head of Hermit Gorge, a sheer drop for hundreds of feet, where the trail turns to the right and descends slowly through the Supai. Santa Maria Spring, with its ivy covered shelter, is a good rest stop. Don't waste time looking for Four Mile Spring. Still shown on the map, it is either dry or covered by a rock slide. In fact, slides have wrecked the trail at several places so that horses can't use it. These places might bother a person at night if he couldn't see the continuation ahead. Where you go down through the Redwall at Cathedral Stairs, you see Cope Butte on the right. This looks difficult but several of us have climbed it recently only to find an old cairn on the summit. The view of the inner gorge from its top is outstanding.

At the base of Cope Butte on the Tonto is a fork in the trail, the right branch going to Indian Gardens. In the old days this formed a popular loop for guided horse parties. On the first day they would take the left branch at the fork and see Hermit Rapid before spending the night at Hermit Camp. The next day they returned to the rim via the Tonto and Bright Angel Trails. The old iron cots under an overhang at Monument Creek indicate that occasionally they stopped overnight here. Modern backpackers also find this loop attractive. I have walked from Indian Gardens along the Tonto to Hermit Creek, up to Hermit Rest and about half the rim drive, and then walked down to Indian Gardens in one long day, but family groups can enjoy a week in the same area. Monument Creek nearly always has enough water for camping and it is also easy to walk down to the river there.

Granite Falls at the end of Monument Canyon is a fine example of a rapid where huge boulders from the side canyon have pushed the full force of the river against the cliff on the far side. This is the locale of the most commonly copied picture from Powell's book, the one captioned "Running a rapid." The quiet pool and stark skyline complete the setting.

Hikers are increasing their use of the Tonto Trail, but routes from the plateau down to the river are far from being crowded. A chockstone in the bed of Salt Creek stopped me, but when the bed was dry an agile climber got down here. The rest of the bed to the Colorado is easy. I succeeded in getting down the broken wall on the east side. James wrote an account of his futile attempt at recovering a boat that a prospector had left at the mouth of the second canyon west of the Bright Angel Trail. He and his two companions were not sure whether the man meant Salt Creek or the nameless canyon between Salt and Horn. After some fum-

bles I succeeded in going down both canyons. Burros used to be common here and I also saw a bighorn ewe in the nameless canyon east of Salt. I call it Epsom Canyon from the bitter deposit of a most unpalatable spring. During the spring there are lots of ticks but fortunately their bite seems not to carry disease.

Horn Creek is another challenge. There is a trace of an old trail along the west side below the Tapeats cliff. West of a pinnacle dominating the mouth of Horn a ravine goes down to the river. This easy scramble brings one to the foot of Horn Creek Rapid. The trail continues along the base of the Tapeats and then, if one could find it, gets to the river across from Ninetyone Mile Creek.

Following a tip from Emery Kolb, I went up Ninetyone Mile Creek into the Trinity Creek basin. One can walk up the Redwall between Isis and Shiva and reach the north rim at the departure point for Shiva. Allow two days to cover this route from the south rim to the campground on the north rim. West of Horn Creek, high above the river, the Kolbs found a fully clothed skeleton.

When you try to reach the river down the bed of Horn, you come to a 40 foot fall. A number of people have given up here, but Allyn Cureton tried a bypass to the east, trusting the friction of his soles on the smooth rock. Beyond this friction pitch there are breaks in the cliff. With care one can bypass a second fall in the bed, this time to the west, and reach the beach. Horn Creek Rapid looks wild in pictures but the best are taken from the north bank where the fury of the current is defied by a projecting rock. This is where two rangers were drowned in 1928. They planned to carry their light boat around the rapid but lost contol and were swept away from the landing. One escaped to the north shore and found a way to get out of the inner gorge and over to Phantom Ranch. We have repeated his route and slept beside the roaring rapid.

Back now to the fork in the trail below Cope Butte – it would be about a mile to the camp beside Hermit Creek. Here in the old days before 1931 was a tent village complete with piped water. There was an aerial tram to bring supplies down from Pima Point and a model T Ford that must have been the only motor car in this section of Grand Canyon. Cottonwood trees were started with the irrigation water. George W. James was writing when the Hermit Trail was being built, and he called this the scenic heart of the canyon. When Phantom Ranch was developed along the cross canyon route, Hermit Camp was abandoned.

A trail goes from the camp down to the river. When I saw Hermit I realized for the first time what a Grand Canyon rapid should look like. People drown in the riffles at Bright Angel and Pipe Creeks but for fury and power, they are not in the same league with Horn, Monument, or Hermit Rapids.

There is no trail up Hermit Creek but the little stream has great charm. Much of the trail to the river has been washed out, but it is easy

to go in either direction. One passes little falls and finally comes to a shady pool bordered with flowers. Above this source of Hermit Creek there is no vegetation to fight.

Across the creek from Hermit Camp the trail continues to Boucher Canyon. The name commemorates a hermit, Louis Boucher, who lived here for over fifteen years. Almost alone he irrigated a garden and grew fruit trees. He built a trail to his secluded world from Dripping Springs and pushed a mine shaft into the black rock. The Matthes-Evans map used to show his trail, but it was omitted from the new map as being unsafe. Hikers who have made the loop down the Boucher Trail and back along the Hermit Trail are enthusiastic and it will probably be restored to the new map.

Leave the Dripping Springs Trail about 0.5 mile from the end and go north along the top of the Supai Formation. It is still as distinct as a good deer trail around the point to a break near the head of Travertine Canyon. The place is marked with a couple of small cairns. Steel rods still show at a difficult spot in the sandstone. The trail is so badly ruined here that a horse can no longer get by. Getting down to the Redwall is safe enough, but one can be forgiven if he misses the trail most of the way. The route is distinct again in the ravine at the base of Whites Butte. It joins the Tonto Trail where the latter is starting through the Tapeats.

Boucher's old rock cabin, roofless now, is south of the trail just before one reaches the bed of Boucher Creek. It takes 25 or 30 minutes to walk to the river from here. Another smaller roofless rock structure southwest of the cabin may have been a chicken coop. The mine shaft, about 100 yards north of the cabin on the right side of the wash, is a fine place to get out of the weather on a cold or wet night.

Louis Boucher must have been quite a character. Unable to wrangle dudes like Bass and Hance, he did befriend wrecked rivermen and he entertained a geologist and his wife. As Edwin Corle said, "He wore a white beard, rode a white mule, and told only white lies."

Where the trail meets the bed, Boucher Creek may be dry, but there is water both upstream and on the way to the river. The walk up the canyon is fine for the scenery and the stroll to the river is a still greater attraction. Boucher Rapid doesn't seem overpowering like Hermit Rapid, but it is lively and long.

The trail goes down the bed as far as the junction with Topaz, the west arm of Boucher, and then climbs back to the Tonto. Some go up just to get a close view of Scylla Butte, a neat little tower of Bright Angel Shale. However, Slate Canyon is a big one with many points of interest. We found a trace of a trail well to the north of an obvious break through the Tapeats. Once you are in the bed, walking to the river is easy. Slate Creek at its mouth has no beach where one can land above the rapid. Crystal Creek, across the river, has piled boulders in the riverbed above the mouth of Slate so that the current roars past.

Crystal Rapid was regarded as rather mild until the winter of 1966. The great flood came down from the north rim and rolled more boulders into the channel.

In Slate Canyon above the Tonto Trail one can almost surely find water throughout the year. There are some minor obstructions with deer trails around them and one can walk on up through the last of the Redwall. There are several caves in the region. At least one is both accessible and deep. It doubles back to a window in the sheer cliff face. Above the Redwall one can proceed up to the rim by going either east to the Diana Temple Saddle or to the west to the notch north of Jicarilla Point. Both of these routes require some climbing ability and strength. I prefer having a fixed rope both in the Coconino west of Diana Saddle and in the Kaibab a hundred and fifty yards to the west. The way up near Jicarilla Point is only a little easier. The route through the Kaibab is southwest of the point just beyond a natural bridge right at the rim. Strong young climbers do this freehand but I use a leaning log.

There are Indian ruins and fine petroglyphs near the Jicarilla notch on the east side of the spur and a few more designs around to the west of the notch. One can go north along the top of the spur and get down to the saddle south of Pollux Temple as well as getting down the slot on the east side of the notch. There are two big mescal pits on this saddle, and Pollux Temple is easy to climb.

One of these difficult routes must have been used by Clement and Tadje when their boat got jammed against a rock in the river. Their companion, Russell, went back to the Boucher Trail and finally got to Bass Camp. When Clement and Tadje told W. W. Bass that they had come from the river to the rim between the Boucher and Bass Trails, he could hardly believe the story. Incidentally, Diana and Vesta have both been climbed. On the west side of Diana a deer trail goes to the top.

The Tonto Trail west of Slate leads on mile after mile. Progress is slow as the trail contours around the side canyons. Views into the inner gorge alternate with closeups of the towering cliffs of the south rim. Geikie Peak is a splendid background for spring cactus flowers. There is seasonal water in potholes, but if one needs to get to the river, there are routes west of Turquoise, almost surely in Ruby, and certainly in Serpentine and the nameless canyon east of the latter. Serpentine to Bass is possible along the river, but it is easier to stay on the Tonto Trail.

Bass Trail

When William Wallace Bass came to Arizona, he soon visited the village of Supai. From the Indians he learned about the canyon, including the location of Trail Canyon, the early name for the present Bass Canyon. An Indian trail went from the rim to Mystic Spring which was north

of Mt. Huethawali. This spring, dry for years, has been deleted from the map. The seep spring at the base of the Coconino south of Chemihuevi Point is, however, still dripping.

For some reason the Bass Trail has withstood the years better than the Hance Trail. The only place where one might need to consult the map would be on the juniper-covered Esplanade. It is very distinct through the Kaibab and Coconino. Just east of the break through the latter formation several Indian ruins can be seen. The map shows how the trail skirts the east base of Mt. Huethawali and then doubles back through the Supai to the head of the gorge in the Redwall. One can take a climber's short cut down directly from the saddle between Garnet and Bass. There is a juniper log to help at the hardest place.

Where the Redwall gorge begins to widen there is a cave on the west side. Hikers who have climbed into it report nothing of interest. North of the Redwall section one can see sky through a hole a hundred feet or so below the crest of the ridge to the east.

About 600 feet above the river Bass had a campsite that was called Bedrock Tanks. Tools and buckets under an overhang mark the place and one can see how Bass hoped to get water by driving a pipe into a crack. It is no longer a trustworthy water source.

Some hikers have panicked when they came to the dry fall where the bed drops sheer to the river, and started back up the trail with empty canteens. They could have followed the trail west out of the bed down to the riverbank.

Near where Bass used to cross the river still lies the metal boat *Ross Wheeler*. Bert Loper built it in 1914 at Green River, Utah, and it was abandoned in 1915 by Clement, Russell, and Tadje.

Across the river, where the map shows BM 2477, Bass had a truck farm irrigated with water from Shinumo Creek. He was following the example of the prehistoric Indians who left their dwellings all through the Shinumo Basin.

One of the more drastic suggestions about modifying the Grand Canyon was to build a railroad through it. R. B. Stanton, the engineer in charge of the survey, thought that the open terrace just north of Bass Rapid would be a good place for a switchyard.

West of the ferry site the trail continues along the south side of the river to the old cable car which Bass used during the high stage of the river. The cable has now been cut for fear it might break and be a hazard to canyon tour boats. The same fate has befallen the other tram three miles downriver which was used to reach the asbestos mines in Hakatai Canyon.

The map shows both ways for leaving the Bass Trail to go west along the Tonto. It omits the spur trail down to the copper mine Bass operated in Copper Canyon. This trail doesn't become clear until one has found an obscure break in the Tapeats well to the north of the Tonto Trail. On

the way to the mine one fork contours north above the camp. Later it starts down steeply, apparently in the direction of another shaft, but we were able to continue below the Tapeats and reach the river opposite the mouth of Shinumo Creek.

When Bass ceased operating the mine he stored some of his duffel in the mine shaft. Farther in, the horizontal tunnel is cut by a vertical shaft. This holds rainwater that comes through a hole in the ceiling, but one may need a cord and a bucket to draw water from this type of well. During wet spells there is often some water in the bed of the wash. The only drawback for using this as a stop for the night is that it is hardly a full day's walk from the rim.

It is quite easy to go from the camp west up to the Tonto Trail again. I didn't locate the trail down to the Hakatai Cable but the slope to the river west of Copper Canyon all looks rather easy. From the Tonto one can see the mines where Bass mined asbestos across the river in Hakatai Canyon. There may have been a trail on the north side of the river connecting the camp on Shinumo Creek with the mines. The older map used to show the trail as far as Burro Canyon but farther west cliffs bar this approach.

Farther west along the Tonto one can look down on the black rocks in the river at Waltenberg Rapid and downstream. The crags projecting from Powell Plateau are impressive. Near some Indian ruins at the last big ravine before Garnet Canyon one can find water in rainpockets but this source would give out in the hot season. There are deep water holes in Garnet and at times there is a trickle in the lower bed. To reach it one should leave the clear trail which goes east above the bed and look for the descent route. This route was used by prospectors and the burros although it was never shown on the map. The water in Garnet is slightly salty, but one can continue out of Garnet along a dim trail below the Tapeats to camp beside the Colorado.

The vestige of trail helps for a third of the way from Garnet to Elves Chasm. Scrambling over the blocks beside the river is slow and a mile an hour is fairly good progress. Strong hikers should go from Copper Canyon to Elves in an easy day. Every river party seems to stop here for glamorous pictures of the falls and the shady pools. This is a logical destination for a four day round trip from the head of the Bass Trail.

One can continue downriver but the going is slow and rough, especially in Stephen Aisle. Ancient deposits of travertine, cut by many ravines, form formidable barriers. The going is best close to the river as far as this route is possible. Where the granite is bent down to the west and disappears beneath the river, one must climb and continue on top of the bluff. Carry water because you will be away from the river for nearly four hours. Rain pockets are few and unreliable. In Conquistador Aisle the walking becomes faster. Even this area was used by Indians, as a crude rock shelter at the mouth of Fossil Canyon proves.

A Supai Indian told the anthropologist, R. C. Euler, that the Indians used to farm the delta at Fossil Creek. When he was a boy his father had taken him there, but he couldn't remember the route. I have been off the rim into Fossil Bay at a break near the head and I am also able to get to the rim of the Redwall on both sides of the gorge. Aerial views indicate the possibility of getting through the Redwall about halfway from Fossil to Forster and the clincher is that there is a rockpile to serve as a step at the bottom of this presumed route.

Esplanade West of the Bass Trail

At Garnet Canyon the Tonto Platform finally gives out, but a new terrace has already become the dominant plateau between the rim and the river. This terrace is called the Esplanade and it is at the top of the Supai Sandstone. The father of Euler's informant, Captain Burro, started to build a trail which would go from the Bass Trail to his home at Supai. It is still recognizable all the way to Forester Canyon, but this is far short of his goal. There is also a connecting trail off the rim at Apache Point.

Below Toltec Point you are in the Royal Arch Creek basin. From the rim above you can see the fine fortification on the promontory at Toltec. Royal Arch Creek is one of the most interesting canyons in the park. There are several ways to get down to the Redwall rim, but only the bed of the wash will take one through this formation. One of the more interesting routes is to drive out on the Topacoba Hilltop Road to the sign indicating the park boundary. From there follow a compass through the junipers to Apache Point. A clear trail descends from just west of the point as the map still shows. Across the deep notch on the very top of the pinnacle north of the trail is a fine Indian ruin. The trail loops below the pinnacle and then descends to the Esplanade on the east side. If the Indians wanted to go west along the Esplanade, they could get through the similar break on that side. The new map shows a natural arch near the lower end of the bed of Royal Arch Creek. The promontory pointing to this arch is the way down through the Supai from the west. The route is down the middle until stopped by a cliff. Then go northwest along the rim to a break behind a detached block of sandstone. Then follow the rim of the Redwall gorge until the burro trail drops into the bed. This is also bighorn country, and we saw six of these stately animals near some water halfway through the gorge.

There is a spring in the lower Redwall large enough to keep water on the surface and link flower-bordered pools. Progress beside the little cascades is easy, although at one place it is necessary for the inexpert climber to wade through foot-deep water. Eventually coming around a bend, you find the Royal Arch for which the creek was named. It is about 60 feet up to the ceiling with a similar span. It escaped detection

from the air because it is about 40 feet through. Though not the largest natural bridge in the Grand Canyon, it is the only one with a permanent stream through it. About 50 yards north of the bridge, the stream comes to a high fall. There is no way to go directly down to Elves Chasm.

A fragile-looking column nearby seems about ready to topple into the void. One can climb to the flat-topped buttress east of the arch and it was here that a helicopter picked me up when I broke my heel by a foolhardy jump. The level ledges under the bridge furnish a fine campsite out of the sun and rain.

The only way from here down to the river is a bighorn trail that goes along a bench east of the bed. Climb to it about three-fourths of a mile south of the bridge. It leads to the terrace east of Elves Chasm. The old map showed a bench mark and it is here all right, a seven-foot cairn. Nearby is the trace of an Indian dwelling. There is much travertine on this terrace and the springs may have been active as recently as the Indian occupation. Toward the east end of the terrace one can climb down to a shelf in the travertine. Only 20 feet of rappelling gets one down to where he can walk to the river. A rock, perhaps cemented to the shelf, makes a safe anchorage for the rope.

There are several routes through the Supai east of Royal Arch Creek and another from the west where the creek starts through the Redwall. The valley going north just west of Toltec Point has some Indian ruins in it. It is all splendid wilderness with very few visitors as yet.

From Great Thumb to Supai

One can drive a jeep or a truck from the Topacoba Hilltop Road up on Great Thumb Mesa. One of the principal attractions is the defensive ruin on the detached promontory at Enfilade Point. Blocks of limestone form a parapet on the side that faces the mainland. It is hard enough to climb to the top without facing the rocks and arrows of the ancient warriors.

The only route down from the east side of Great Thumb Mesa leaves the rim just north of where the new map puts the check point called "Cave." It is a rugged bighorn trail. The sheep seem to have the Esplanade from Forster Canyon to Tahuta Point to themselves. I have had the thrill of three sightings of bighorn sheep during my brief visits. Burros and wild horses don't care to cross the steep shale guarding this territory.

Shallow depressions in the bare rocks catch plenty of water during the rains but the sources are far apart at the dry season. Where the main bed of Fossil starts cutting into the Supai there is a deep pothole that should be reliable. There is also a seep beneath the Coconino at the head of Fossil.

A better-known spring is at the lower end of the Great Thumb Trail in the bay of 140 Mile Canyon. Even it went dry one year in October. This spring can be reached more directly from the south rim of 140 Mile Canyon via a deer trail.

Keyhole Natural Bridge is an interesting objective. One can leave the rim where the jeep trail first meets it and go down to the bridge from the southwest along a fault valley. The bridge forms one rim of a deep pit and it would require a rappel to go down and through the bridge. A steep smooth incline below the bridge would probably require more rope. Luckily for backpackers, there is a spring just west of the bridge and this may have drawn the prehistoric builders of a peculiar little cairn. The route below the bridge to the river has been checked by at least two river parties including that of the discoverer of the bridge, P. T. Reilly. He found this bridge while studying a picture he had taken from the air.

A little study of the map shows that the same fault that controls the route to Keyhole Natural Bridge continues far to the southwest. It provides access to the Redwall rims in Olo, Matkatamiba, and Sinyala Canyons. The fault even lines up with Beaver Canyon on the west side of Havasu Canyon. I have followed it from the base of Mt. Sinyala northeast across the canyon of that name and then down into Matkatamiba. There is a seep spring near the top of the Redwall in Sinyala Canyon and another near the bottom of the Supai in the fault ravine into Matkatamiba. It would be interesting to try following this fault across Matkatamiba and Olo. Detours to head the canyons or even to go out above the river along the Redwall rim would be no more tedious than those of the usual route along the Esplanade.

There must be other ways to go off the plateau down to the Esplanade. Allyn Cureton and I found one in the bay between Gatagama and Hamidrik Points. From a distance I thought I saw a route east of Paya Point. Two other routes lie on either side of Manakacha Point, but they both require ropes. About half a mile east of the point, on the north side is the upper end of the Apache War Trail. Some route study is needed to find the way off the rim and also to get through the Toroweap and Coconino cliffs. About halfway through the latter, Jay Hunt drove a spike into a crack to serve as a rappel rope anchor. After only ten or twelve feet on the rope, one can proceed down a narrow and steep ramp. A horse could cover the rest of the route to the village.

Another better known route, called the Rope Trail, is south of Manakacha Point and even south of where the old telephone line went down to Supai. Park at the end of the south fork of the Manakacha Point Road and descend the valley south of the road. When we looked for this trail we had general directions from Earl Paya, a Supai Indian; still we walked right by the slot in the Toroweap where we should have started down. A rope about 100 feet down this ravine is a convenience rather

than a necessity, but there is another fixed rope below where a freehand climb is possible only for the expert. The route lies to the south of a little butte in the shale on the Esplanade. The final descent to the village is mapped and mentioned in the book on Havasu Canyon by Joseph Wampler. He recommends a guide but if you remember that you should get down to the north of a big deposit of travertine, you shouldn't be long delayed. The Indians use this route very little and they warn you that the ropes may be getting rotten.

Routes to Havasu Canyon

Few tourists hear of more than two trails to Supai and the vast majority of visitors use the Hualpai Trail at the end of the road from near Peach Springs. The longer Topacoba Trail starting after 36 miles of rough road from Grand Canyon Village is little used today. Topacoba Spring is south of the switchbacks through the Coconino. There is a seep spring and some rainpockets east of where Lee Canyon meets Havasu Canyon but one should carry plenty of water for the hot 12 miles from the beginning of Havasu Creek to the trailhead.

On the right wall of Havasu Canyon about 50 yards south of the junction with Lee there is a fine display of petroglyphs and pictographs, pecked into and painted on the rock. Some look rather fresh as if they had been done with schoolroom chalk, but the petroglyphs look ancient. Some of the animal likenesses look more like the ibex than the bighorn, but the ibex never was in North America.

South of the Topacoba Trail the next access is through Moqui Trail Canyon about six miles south of the park boundary. One can drive much closer to the trailhead than the map indicates. There are some rough places, but a truck can reach Chickapanagi Tank. The route through the Coconino is a place of wild beauty going among huge rocks in the defile. In the spring numerous redbud trees are in bloom, and the birds love it. This is the way the Hopis came to trade with the Supais. There is a good spring just south of where the trail gets through the Coconino. This is on the new map of the entire park, but the next routes to the south could only be studied from the 1/250,000 Williams Quad. The Kirby Trail is reached by driving southwest from the ranch just below the north edge of the map at the designation R. 1 W. (I had to ask for directions at the ranch.) One can also walk down the main arm of Havasu or Cataract Creek. There is usually some water standing in Coconino potholes and the oldtimer Kirby had a spring near the foot of his trail.

About 2.5 miles northeast of the nearest road at Platinum Tanks is an old historic route called either the Kla-La-Pa or the Highwall Spring Trail. General Crook is supposed to have come this way in 1882. There

are Indian ruins on each side of the bed west from the lower end of the trail. Highwall Spring is at the end of a short spur. It is a trickle in the bed of the wash and the Indians have left shovels nearby to dig it out.

Following the main streambed farther downstream one comes to Black Tank Wash, a tributary from the south. In 1882 W. W. Bass and a chance acquaintance named McKinney came down the main bed to visit Supai. McKinney went on ahead to scout the route and didn't return to the camp. Bass led a search party from Williams but McKinney was already out of the canyon, having gone up Black Tank Wash. The route through the Coconino is rather rugged with juniper logs wedged into some cracks. Another route is at the head of Driftwood Canyon. One enters the wash from block 11 on the new map of the entire park. There is no trail but the climbing is easy.

West of the Hualpai Trail there is a rather rugged access route from the northwest side of Wescogame Point. At the top of the Coconino go around below the end of the point and down a ravine to the right. On the Esplanade go north to the next tributary which is called the Horse Trail Canyon. There is a well constructed and scenic route through this canyon. One needs the National Canyon Quad Map to find this trailhead by car.

The same map shows how to drive to the head of the Beaver Canyon Trail. Leave the main Supai Road 2.1 miles beyond the well graded road which is marked with the sign Camp 16. It is about 20 miles of fair to bad road. The top of the trail is obscure but going north to the rim and looking down to the right, you will see the trail. It is often steep but quite distinct to the bottom of the Coconino. From here on through the Supai gorge one keeps to the bed. The trail is distinct again where it bypasses some drops in the bed. A couple of springs deep in the Supai seem to be reliable, and there is also a little spring at the top of the Redwall right in the bed. The trail stays at the top of the Redwall and eventually reaches the village at this level.

There are two ways to get off the Redwall down to Havasu Falls and they both involve a bit of hand and toe climbing. One is via Ghost Canyon which is a ravine north of Havasu Falls and the other is a shorter scramble south of the falls.

For real adventure one can try going down the bed of Little Coyote Canyon. Soon you come to a barrier fall at a big chockstone. It looks worse than it is to get down but the inexpert climber has to struggle to get back up. A solo climber would have to lower his pack on a 30 foot rope. There are no other serious obstructions all the way to Havasu Creek. There is a fine spring about halfway through the gorge, and the whole Redwall passage is fantastically beautiful.

If one also should count as access routes the Redwall rims from upriver and down and the walk up Havasu Creek from a boat, there are 16 routes to Supai. Perhaps the approach by helicopter is a seventeenth.

Nankoweap Basin

The north side of the river is certainly as interesting as the south and it is less visited. Nankoweap Valley is becoming more popular but as long as the access routes remain rugged, it will hardly be crowded. Drive to the north side of Saddle Mountain through Houserock Valley or leave the car on the high plateau west of Saddle Mountain. Along either route the walk to The Saddle takes over an hour. The marvelous view from the top of Saddle Mountain can be reached by a trail up the northwest side. Although this summit is lower than the rim forest, the trees are more exposed and they show the effect of timberline gales.

The Nankoweap Trail goes south over the Saddle and levels off below the top 100 feet of Supai. It stays on this bench all the way to Tilted Mesa. On the southwest slope of this mesa parts of the old trail are so badly weathered that I prefer a deer trail which starts down farther to the south. The trail isn't shown at all on the new map of the park and the old east half map showed it ending at the bottom of the Redwall. It is true that a section of the trail is missing. Just below this bad place in the shale a deer trail contours east. The old horse trail shows again as it breaks through the Tapeats. This is probably easier than scrambling down the ravine directly below the missing section.

Every arm of Nankoweap has its interesting features. The one between Marion and Seiber Points offers the possibility of climbing the break through the Redwall on the south side. One can go on up through the Supai and follow the Hermit around to the regular trail. The branch north of Woolsey Point has a beautiful fall below a perennial spring. A number of ruins remind one of the time when this valley was home for quite a clan. At least one on the north side is a well preserved cliff dwelling. The arm between Woolsey and Mt. Hayden almost hides the largest natural bridge of the Grand Canyon. All knowledge of this had been lost when Senator Goldwater discovered it from the air.

There is another access route down into the arm between Kibbey Butte and Brady Peak. After getting through the Redwall through a ravine to the north, contour to the right around to the north side of Kibbey Butte. After this rather precarious footing, it is a relief to follow a deer trail up to the Kibbey Saddle and reach the rim north of the promontory. There are definite signs of trail construction in the Coconino and near the rim, so we can conclude that prospectors came this way.

A window through the fin projecting southeast from Alsap Butte is interesting to visit. Another good scramble is Nankoweap Butte, relatively low but still affording fine views. Nankoweap Mesa requires more climbing and care in route finding, but a deer trail goes to the top. One feels like Robinson Crusoe as he explores this extensive sky island. There

are small springs spotted all through the basin of Nankoweap and pottery fragments indicate that it was occupied 800 years ago. Little Nankoweap does not go through to the river, but it is interesting both above and below the barrier falls at the lower end. One should be able to climb north at the lower end and get a view down on the river. Don't count on finding water in this valley.

Nankoweap Creek itself goes from the broad basin to the river at a gentle gradient and it is easy to reach the cliff dwellings just south of the mouth. River runners have beaten a path to them.

Kwagunt Canyon

This was a welcome watering place on the Horsethief Trail connecting the Tanner Trail with the Nankoweap Trail, but it is also another fine place to slow down and look around. The ranger party in 1928 reported a lost city of at least 25 rooms, but later the man who supposedly had seen it disclaimed the find. The city has never been rediscovered but a terrace on the south side of the stream and just west of the river narrows is said to show a number of room outlines. A walk through the Tapeats narrows of the upper bed is rewarded with a view of jagged Tritle Peak.

Just west of Banta Point a steep arm comes down from the Kwagunt-Lava Creek Saddle. A break through the Tapeats wall east of the junction leads to a deer trail through the Redwall of this arm. The Supai section of this ravine is forested and one can turn to the right and go along the Hermit north of Point Atoka to a deer trail to the rim east of the head of Kwagunt. At the bottom of the Coconino just west of this trail, about a quarter mile east of the end of the main canyon, is a little spring. There is another small spring in the lower Redwall along this route. The spring that keeps water in Kwagunt at the Horsethief Trail crossing is surprisingly low, near the Butte Fault. Water is certainly scantier in Kwagunt than in Nankoweap.

The Horsethief Trail is straightforward but strenuous. Map study hardly prepares one for the number of stiff climbs to cross the transverse valleys. Kwagunt forms an easy route to the river and hikers have climbed down Malgosa also. One can walk the riverbank from the park boundary at least as far south as the mouth of the Little Colorado. It would also appear possible to go south out of Kwagunt valley west of Gunther Castle. The latter commands a terrific view from the top and it can be climbed through a Redwall ravine on the southwest side.

Awatubi, Horsethief Trail in valley to the left

Chuar Valley

This broad drainage goes by the names of Chuar and Lava. The actual lava is all near the river with Chuar Lava Hill on one side of the creek and Lava Butte on the other. The latter challenges the climber with a vertical crack on the southwest side. There are some old mine shafts in these ancient basalt flows. The ore was mostly copper with a trace of silver. Harry McDonald began this work about 1891 making him a contemporary of Ben Beamer at the mouth of the Little Colorado. During World War I the McCormicks renewed this mining activity, taking the ore up the Tanner Trail. But McDonald was seen with his burros on the Walhalla Plateau. Otis "Dock" Marston, who has suggested so many historical projects concerning the Grand Canyon, prompted me to find McDonald's old route off the rim.

This lead was responsible for my finding the deer trail west of Point Atoka. One can park a car off the rim road where the map shows the elevation figure 8353 and in a few minutes be starting off the rim in the bay just east of the one at the very end of the main arm of Kwagunt. McDonald and his burros stayed high at the Kwagunt-Lava Saddle and passed along the west base of Siegfried Pyre. They would have broken through much of the Supai before rounding the corner towards Hubbell Butte. The route is along the west base of Hubbell and over the top of Poston. The burro route could go down the Redwall northwest of Point Chiavria and then it would turn right along the Tapeats rim to a break on the south side of Chiavria.

A man can also scramble directly down from the Kwagunt-Lava Saddle south into Lava. A Supai ledge near the top seems like a barrier but there is a break to the west. The Redwall requires some study and the main bed drops over a 60-foot cliff at the bottom, but can be bypassed on either side. To the west one passes close to the second largest natural bridge in the park. To the east one would go quite close to a shallow cave where Donald Davis found seven unbroken pots in 1969.

The grandeur of the walls above this upper arm of Lava is enhanced by the beauty of the vegetation along the bed near some little springs. One can also get through the Redwall just west of Hubbell Butte, but this is harder than either of the other ways. Perhaps too hard for a burro is the route on the south side of the neck leading to Point Chiavria.

These routes almost converge on one of the most interesting Indian ruins in the whole park. It is under an overhang on the north side of the bed several hundred yards west of the junction of the main arm and the one from west of Juno Temple. One room is almost intact and there are several low room outlines as well as some picture writing on the ceiling. It is a fine campsite during a storm, but bugs like it too. We saw a scorpion near our bedrolls.

The south arm must be entered directly across from the ruin since there is an impassable barrier fall in the bed. To reach the saddle between Cape Final and Juno stay to the west and catch the deer trail near the top. It continues down into the north arm of Unkar. We have climbed Juno and Jupiter and have found that the fastest way to get down into Lava is via a rope route on the north side of Cape Final. Here in the biggest ravine one has to rappel about 50 feet and a few yards ahead a short rope is a comfort in getting off the ledge. The route from Lava over the pass into Unkar continues to the river with no difficulty. A dry fall in the Tapeats has an obvious bypass.

One can also go from Chuar Valley over into Basalt Creek. The west arm of Basalt is blocked by a high fall, but the east arm is easy. There are old cairns, presumably dating to mining days, on the summit of Apollo, the Apollo-Venus Saddle, and in the east arm of Basalt. There are indications of mining camps on both sides of the river at the mouth of Basalt.

Another trace of not-so-ancient human activity is the bootlegging site. It is near the bed of Lava Creek at the Junction with the draw that comes east from the north end of Juno. The ranger party in 1928 estimated that it was older than the Volstead Act. Some barrel hoops and the rock base of the still are left. Perhaps the great flood swept away the old corn grinder. The bootlegger had cut down a cottonwood and had screwed the grinder to the stump. By the late fifties four shoots had grown up surrounding the grinder and the new trunks were five or six inches in diameter. There is a nice little spring a few yards up the arm by the still.

Unkar Valley

One can walk from the ruin near the forks of Lava Canyon over the pass to Unkar and then down to the Unkar Delta in about eight hours. Here one of the most extensive ruined pueblos in the entire park was excavated under the direction of Douglas Schwartz during the summers of 1967 and 1968. Farming must have been possible on this expanse of sand and gravel. A little water surfaces at two or three places in the bed of lower Unkar and there is more assurance of permanent water at some cottonwoods below Angel's Window and in the Tapeats of the branch just west of the long main arm. One can climb through the Tapeats and the Redwall to the saddle between Freya and Vishnu Temples. From there go north along the Redwall rim west of Freya and climb through the Supai directly up to the notch between Cape Royal and Freya. The descent through the Redwall into Vishnu Creek here is actually easier than getting up through the Supai. From this notch work your way along the Hermit Shale to a break in the Coconino south of the elevation number 7994. About 100 yards west of this ravine there is a dripping spring at the base of the Coconino. At two places near the bottom of this Coco-

nino route one needs a 30-foot rope to pull up the pack. At the top of the sandstone angle to the east and walk up through the limestone. Near the top one passes Indian pictographs hidden under ledges. They include the usual odd designs and also a child's hand in red clay. It is only a few yards to the parking lot where the exhibit explains the Indian occupation of the Walhalla Plateau. A path leads to an excavated ruin and to the east is a citadel ruin on an easily defended sky island.

From the Freya-Cape Royal Saddle one can follow the shale to the southwest and eventually reach the break in the Coconino at the northeast end of Wotan's Throne. With patience one can locate a safe route up the sandstone, through a gate in the Toroweap, and along the north side of the Throne. Over near the west end one can walk up through the woods. It takes an easy scramble of about eight feet to be out on top through the rim cliff. One feels like Robinson Crusoe as he explores the top. Surprisingly there are ruins up here and also a crude shelter along the route through the Coconino.

Back at the Feya-Vishnu Saddle one can continue southwest into Vishnu Creek. Near the bottom of the Redwall it is necessary to contour around to the right to a talus slope. From the saddle one can stay on the Redwall rim and climb Krishna Shrine. Vishnu Temple was climbed twice by Merrel Clubb with different companions, and he was also on Wotan three times.

Rama Shrine can be climbed far more safely than Vishnu Temple. There is an easily traversed ravine through the Redwall east of Rama draining into Asbestos Canyon. I found evidence in the form of a flint knife that the Indians used this route. One can stay on the Tonto north of Sheba and The Tabernacle and eventually get down to the bed of Unkar two miles from the river, or go east from Solomon down the wash to reach the river a mile southwest of the Unkar Delta.

I have walked the slope below the Basalt Cliffs to go from Basalt Creek to Unkar, but if one has a way to cross the river safely, it is easier to proceed along the left bank of the Colorado.

Various routes are possible in and around Vishnu Canyon. It is a stiff six to eight hour waterless route to go along the Tonto to Clear Creek. There are springs in Vishnu Creek near the top of the granite, in the Tapeats narrows, and near some cottonwoods at the Tapeats-Shale contact. Getting down to the Archean bedrock from the west requires care in following a narrow ledge of travertine. It is impossible to go down the main bed to the river, but these falls can be bypassed by some rugged climbing over spurs east of the bed.

I have climbed Newberry, Sheba, and Solomon, all from their east sides. They all require some route finding and a chimney on the Solomon route is a trap with a chockstone ready to move at the top.

Asbestos was busy with mining before 1900 and it is interesting to poke around the old camp trash. Coming from the west one can enter

the canyon along the ramp of red Dox Sandstone or along the broad slope north of a knoll. To connect with the former route, one needs to leave the Tonto back about halfway from Newberry Butte to Asbestos, and this trail winds so much that it is probably faster to keep to the more direct northern route. In fact one can come down into the nameless ravine where the name "Asbestos" begins on the map. Here there is still a bit of the old trail connecting the lower valley with the upper. The main bed is blocked by an impassable fall. The map shows a spring in the upper valley, but it should be moved about a third of a mile southeast of the map position. It is high in a ravine that parallels the arm from the east side of Rama. There is also some water where the map begins the name Asbestos, and the best spring of all is in the lower valley where the red Dox meets the black basalt. In wet seasons this water persists above ground and drops over a high fall.

A good trail connects the mining camp with the river. It goes to the east near the brink of the high fall and turns upriver. Sloping down along the natural ramp it meets the Colorado below Hance Rapid. The river is still quite swift and the ferry must have been safe only during the slow stage of the river.

One can go from the mining camp to the Tonto southwest of Sheba directly up the ravine in that direction.

Hindu Amphitheater

The Hindu Amphitheater of the Crystal Creek Basin is one of the seldom visited sections of the park. No horse trail has ever penetrated this bay, but there are at least five ways to enter it. The easiest is from the river. One can walk down the Hermit Trail and use some type of flotation being careful to walk around Boucher Rapid. The river is calm except for this rapid and it is easy to land on the right above the mouth of Crystal. An Indian ruin can be found on the terrace to the west of the mouth of the creek.

When the R. B. Stanton railroad survey party camped at the mouth of Crystal in February, 1890, Harry McDonald quit and succeeded in walking through deep snow on the rim to the VT Ranch, deserted in the winter, and from there to a ranch in Houserock Valley. How he reached the rim remains a mystery. The main party delayed their departure while Stanton, Hislop, and Kane took a noteworthy overnight climb. They went to the Tonto on the east just inside the side canyon, then around to the north side of the Tower of Ra and made a heroic Redwall ascent over to the west side of the north face. After a cold night with only a fire for warmth, they succeeded in coming down a daring route northwest of the saddle between Ra and Osiris. At a water pocket down in this tributary they got the first drink they had had for over 24 hours, and then returned

to the river along the creekbed. While they were gone, others of the party found a way to the Tonto west of the bed.

An obvious, but very laborious, way to reach Crystal Creek is along the Tonto from Bright Angel Creek. Probably the easiest dry land route is to drive to within a mile of Tiyo Point and walk to the rim as in going to Shiva Temple. This is across the bay north and west of Tiyo. One can follow a deer trail down a ravine and then west to the ridge going south.

There is an easy way to go through the Coconino at the south end of this promontory. From the saddle walk down the arm of Dragon Creek just north of Shiva. Indian signs such as a mescal pit, chips of flint, and pottery fragments have been found on the Shiva Saddle and there were some ruins on a terrace near Dragon Creek. One of these 900-year-old relics was swept away by the great flood of 1966. Other ways up the Redwall can be found at the heads of both arms of Dragon Creek and also below the northwest side of Shiva.

Just south of the large mescal pit on the Shiva Saddle lie several very large rocks. On their broad surfaces, large pits hold a surprising amount of water after the rains. Other rain pockets are down in the ravines both east and west of the saddle. At the heads of both arms of Dragon Creek fir forests hide little springs. In the east arm there is an impressive limestone tower shaped like a blockhouse and there is a small natural bridge through the Redwall rim nearby. The main Dragon Creek Spring is located down canyon from the Tapeats dry fall.

For some reason the 1966 flood didn't tear out the trees in Crystal above the junction with Dragon. The Crystal Spring is in a grove of cottonwoods midway between the Tapeats narrows and the Redwall gorge. This gorge cannot be climbed at the end, but as the canyon narrows a fault provides a route to the west rim. A little route study shows a way north to the Kaibab Plateau.

It is possible to walk the bank of the river from Crystal west to Tuna Creek. There may be no barrier fall in Tuna and it is certainly possible to walk along the Tonto from Crystal to Tuna. There is usually a seep to provide water in the lower Tapeats and one can usually find some in potholes at the base of the Redwall.

South of a hill on the Tonto west of Tuna there are still some signs of a temporary camp. In 1944 the pilot of a bomber thought that the plane might be disabled and crash. He ordered his three companions to parachute into the canyon at night. They were found the next day and were supplied by the air drop until they could be guided out to Point Sublime ten days later. R. E. Lawes and Alan McRae found the route, but they did not record it. I rediscovered a route to their camp off the rim west of Point Sublime to the pass between Flint Creek and Tuna. The way down through the Redwall in this arm of Tuna requires just a little route study. A burro trail goes south to the vicinity of the camp, and a break in

the Tapeats close to Tuna but on the river side leads down to a boat landing at a sand beach.

Merrel Clubb, who talked to men present during this search, thought that the Lawes-McRae route was down from Grama Point into the east arm of Tuna. It would be interesting to check the feasibility of this and also the passage through lower Tuna to the river.

Shinumo Amphitheater

There are a number of ways to get down into this area. The old North Bass or Shinumo Trail is the best known. The route down from Swamp Point to the saddle and on to the top of Powell Plateau must have been rebuilt during the thirties. A frame building just west of the saddle must have served as a dormitory during this construction work. It takes only ten minutes to reach a good spring at the bottom of the Coconino east of the saddle. The trail beyond the spring, as shown on the map, is badly overgrown with brush and it is now easier to scramble down a rockslide or bare ravine below the spring. Below this steep talus one stays in the dry creek bed to the Redwall. There is water, however, in a tributary from the east and also in the main bed near the top of the Redwall.

The dim trail, perhaps now marked by plastic ribbons, veers out of the bed and goes through the junipers west of the bed. Close to the start of the Redwall gorge, on the east wall, one can see a natural bridge where a cave has collapsed. To be sure of locating the route down the Redwall one should have the map. One needs to go down the last of several parallel ravines to a ledge running south beneath a bare wall. It seems like an improbable route but more switchbacks take you to the bed below the Redwall. A little farther there is more water flowing along the bare shale. The map shows the trail going down through the Tapeats in a wide swing to the southwest. This stretch is hardly recognizable at present and it is both more direct and easier to follow a burro trail down just east of the benchmark with the elevation 3150.

A distinctly different alternative is to stay on the east side of White Creek almost to its junction with Redwall Canyon. Go down to the bed below the Tapeats through a ravine. To the north there is the deepest and narrowest fissure in the Tapeats in the entire park. A huge boulder is lodged between the walls 80 feet up just as it was when the Kolbs photographed it sixty or more years ago. One can walk down White Creek to Shinumo Creek and see signs of trail construction proving that Bass brought his tourists here.

The main trail crosses Shinumo Creek to reach the site of the old Bass Camp. The terrace across on the right bank is surprisingly broad and free of rocks. With irrigation it served both prehistoric Indians and W. W. Bass as a fine garden, much more suitable for this purpose than the tract used

by Louis Boucher. Instead of continuing along the creek for the last mile to the river, the trail goes up to the south over a ridge. The open terrace below was where R. B. Stanton planned to build a switchyard for the railroad that was never built. Bass had two ways to cross the Colorado, a boat above the rapid and a tram for use during floods.

The new map omits some trails that were shown on the old West Half Map. A trail built by Bass west into Burro Canyon is still recognizable and so is his trail rising along the south wall of Shinumo Creek east of its junction with White Creek. The latter doesn't go far enough to do much good and the hiker still needs to make his way along the creek bed.

Back where the main trail encounters the Tapeats in White Canyon, there is still another choice. Stay above the Tapeats past the mouth of Redwall Canyon and follow a good burro trail along the east rim of White Canyon. This continues as a fast and clear trail around to Merlin and Modred Abysses. One can move fast and also get fine views of the entire area. Just north of the junction of Merlin and Modred one can cross to the other side. The burro trail continues for a short distance north along the east side of Merlin but then progress becomes difficult through the dense vegetation along the stream. The dry bed above the main spring is easy again and the bed remains clear even when the small flow from South Big Spring appears on the surface. A team of expert climbers got up through the Redwall in Merlin Abyss, but the ordinary backpacker would turn east into Shinumo Creek, really the main canyon. Just before this becomes impossible, there is a transverse fault cutting a route through the Redwall both to the south and north. Merrel Club found the route down here from the Elaine Saddle. It is sporty and a solo hiker would need to pull up his pack with a rope at one place. Near the top of the Supai the route turns away from the ravine to the east.

Above the Supai there is another choice. Fight through the brush to the bed below South Big Spring, go through a break in the Coconino north of the bed, and on to the road. Or go south at the top of the Supai and get to the forest on Lancelot Point near the end of the point or farther east along the south side.

Elaine Castle can be climbed from the south side. Beneath the Toroweap caprock are a number of rooms built by the aborigines. The break through the Toroweap is on the north side. One can also go down southeast from Elaine Saddle directly into Modred Abyss. There are Indian ruins in Modred and caves that attract spelunkers. An expert climber can get out of Modred to the east and southeast, but the brush is bad above the Redwall. Modred has a fine stream coming out of Abyss Cave and here one gets the feeling of perfect wilderness. Through the whole Shinumo basin the creeks have cut deep without removing the great mass of rock, quite a contrast to the open valleys of Nankoweap and Unkar.

Along the Tonto on the left side below the junction of Merlin and

Modred, wild burros have established another fine trail. This is the easy way from Modred to Flint. On the south side of Flint, opposite the mouth of Gawain Abyss, there is a very adventurous route up the Redwall. I flew over it more than once, but I had to try it before I felt sure it would go. A good climber would do it handily but when I tackled it alone, it almost stopped me. By this time I had accepted the challenge of completing a route below the north rim from one corner of the park to the other. To fill in one of the gaps, I walked over to the top of this Redwall climb from the Flint-Tuna Pass. I found an old cairn pointing away from the pass toward my Redwall descent.

No discussion of the Shinumo area should omit the Powell Plateau. It forms the western skyline for the viewpoints along the south rim scienic drive. The trail from Swamp Point continues through the fine ponderosa forest. Magnificent views of the river and the canyon are obtained from any point on the rim. This sky island slopes gently down to the south and is divided about equally between ponderosa pines, junipers, and sage. There is a rumor that mule deer bucks on Powell Plateau grow extra large racks. Between Powell's two river trips, he was guided to what must have been Swamp Point and he left claiming that he had seen the finest panorama from Wyoming to Mexico.

Tapeats and Deer Creeks

This is the region made famous by Thunder River, perhaps the only river that is the minor tributary of a creek, and almost surely the shortest river in the world. This river bursts forth from two openings in a cliff. Below the initial hundred foot fall, it foams down over cascades and more falls for a half mile to join Tapeats Creek.

This wonderful stream is usually reached from the Indian Hollow Campground at the head of the horse trail. There is no hint of anything unusual where one parks the car, but the whole new world of the Grand Canyon appears with startling abruptness at the top of the next rise. At the top the trail goes to the west and shouldn't be hard to follow. After threading its way through grotesque rock forms, the trail descends the Supai and Redwall by many short switchbacks. Surprise Valley below may have received its name from its unusual bowl shape and the nearly hidden outlet through Bonito Creek. The trail leaves the bowl at the northeast rim and one immediately sees and hears the thunder of the spring, the most dramatic beginning imaginable for a stream. The trail continues down to Tapeats Creek affording more glimpses of other falls and cascades.

There is a shorter route which is safe enough for boy scouts although too rugged for horses. A little southeast of Big Saddle Hunting Camp a fire road branches toward the rim from the main road. When close to the

rim, take the fork paralleling the rim to the west. Park at the depression where the rim bends toward Monument Point. Walk the jeep trail along the east side of the promontory and leave the top on the east just short of the point. A deer trail goes down through the Kaibab Formation and it continues below the point to the west at this level. After walking about ten minutes northwest from the point, one reaches a break through the Toroweap and Coconino Formations. You can go almost straight down to the regular horse trail and thus save an hour of walking.

The popular route from the end of the trail to the river is along the east side of the creek, although the high water of early June makes fording dangerous. Here in the open valley one will see some pot-hunted ruins. Where the creek drops into the narrow lower gorge, cross again and follow a rising ramp. Near the river there is an easy descent through a ravine.

The interesting and more remote Stone and Galloway canyons can be reached by staying on the east rim of the lower gorge of Tapeats Canyon. Proceed upriver at this level. Stone has a permanent flow of water, Indian ruins, and a superb headwall formed by Steamboat Mountain. Deer or bighorn trails lead to the river and also up the east wall of Stone Canyon. One can enter Galloway along the beach or above the Tonto.

Some adventurers also go from the foot of the Thunder River Trail up the bed of Tapeats Creek. This trip through the striking narrows may be impossible near the first of June when the water is both high and cold. For a short distance the water fills the bed from wall to wall and several crossings are necessary. A bit more than a mile upstream from the trail a tributary from the north contributes almost all the water. At the head of this V-shaped valley beneath the Redwall are the springs. Above to the east is a cave which can be followed to where the entire flow is in one large corridor. At the highest stage the cave serves as a spillway.

If one continues east beyond the cave tributary, he can go up the Redwall and on to the Kaibab Plateau in two ways. The first is a short distance into Crazy Jug Canyon along the west wall. Upon reaching the Esplanade go west to a horse trail that reaches the rim between Monument Point and Crazy Jug Point, or east across Crazy Jug Canyon. Another trail connects with the rim at Big Saddle.

The second way through the Redwall leads to the south rim of Saddle Canyon. This is more of a climb and requires a rope to pull up the pack. The route to Mauv Saddle and Swamp Point is longer and harder to follow.

Deer Creek, a real gem among the Grand Canyon tributaries, is reached by going west from the Thunder River Trail in Surprise Valley. In 1882 the geologist, Clarence Dutton, took horses down a newly constructed prospector's trail to what he called Tapeats Creek. His description fits perfectly with the route going down to the river at Deer Creek Falls. Only a little of the old trail construction still shows. South of the

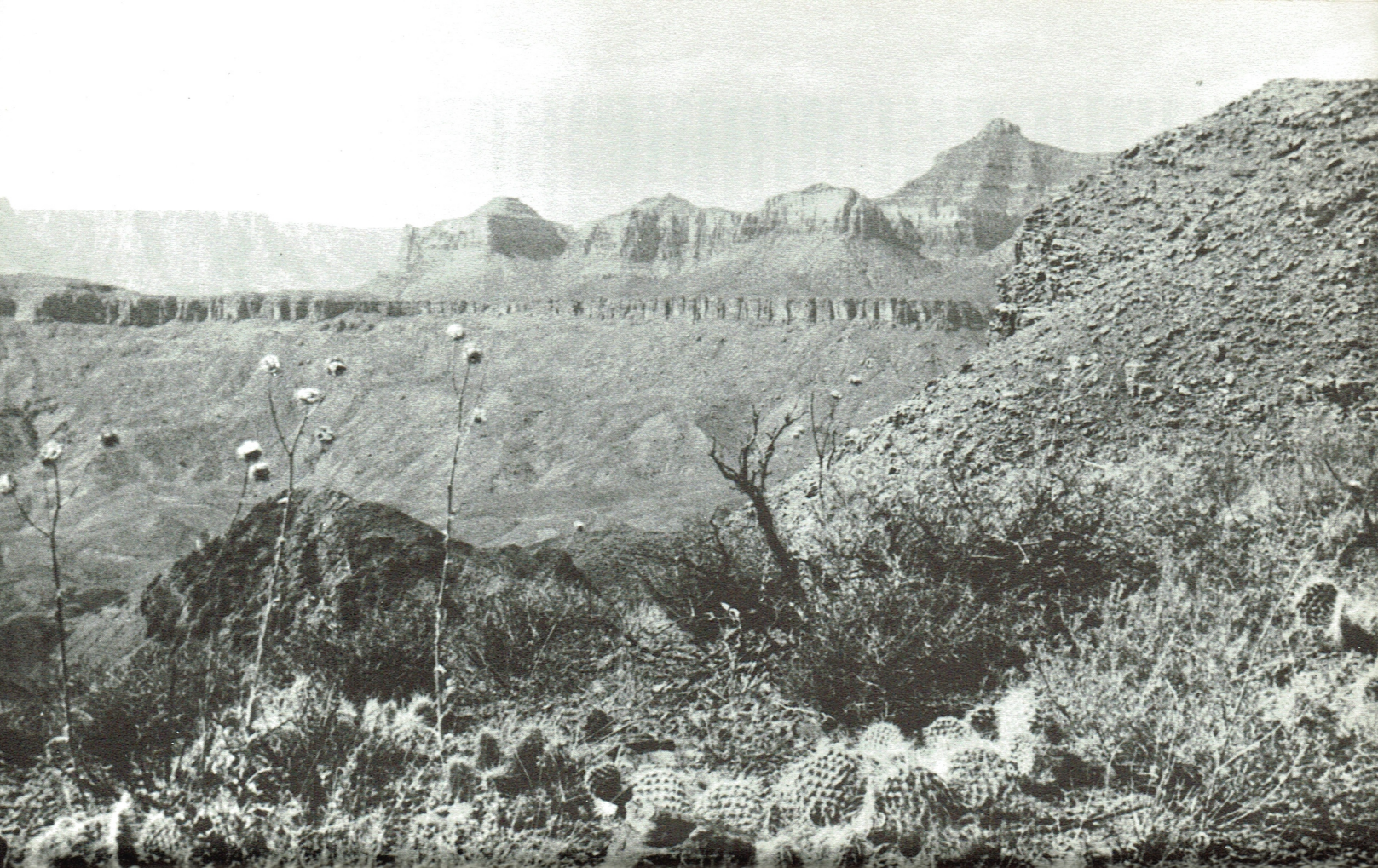
trail at the bottom of the Redwall a spring spills from the cliff. Cavers have rigged a scaffold and explored the hole but the depth wasn't comparable to the caves behind Thunder Spring and the Tapeats Creek source, approximately 3000 feet and 6000 feet respectively.

Indian ruins are to be found in at least three distinct parts of Deer Creek Valley, close to the bottom of the trail, on the west side of the stream a quarter of a mile north of the final gorge, and east of the stream about the same distance from the Colorado. Thickets of cane on the level floor show that Indians could have irrigated the valley and raised crops. Perhaps this swamp explains the prevalence of little flies that nearly drove us crazy when we camped here in early June.

The upper arms of Deer Creek have been found to be rough going. The arms north of Vaughn Springs are impossible without hardware, but the northeast arm has been traversed without a rope by strong climbers. Perhaps the most interesting excursions relate to the lower end of the valley. The most photographed route penetrates the narrow gorge where the stream cuts deeper and deeper below a narrow ledge.

Out of sight in the curving slot the stream makes a final 100-foot plunge to the river level. At the end of the gorge one can follow a trail down to the river and come back beneath the fall. A good scramble along a route east of the fall brings one up on the ridge separating the valley from the river. It is not hard to follow the bench east beyond Granite Narrows and then go down to the riverbank. This way to reach the mouth of Tapeats Creek is much faster than the trail through Surpise Valley. A still more ambitious project is to follow the river down to the mouth of Kanab Creek. This area is second to none in possibilities for wilderness adventure.

This guide could have been expanded to two or three times its present length if I had included more of my observations and experiences. However, if this much helps the reader plan his own treks, I shall feel repaid. A final word: much of the canyon is hot and dry in the summer and should be approached with caution.



Acknowledgements

Almost all of the routes covered by this guide have been traversed by me. A majority of the projects, however, have been suggested by reading authors such as George Wharton James and E. D. McKee, consulting maps, and talking with anyone with experience in the canyon. Prominent among these would be George Beck, A. Cureton, Jerry Hassemer, George Billingsley, James Sears, Krehe Ritter, Donald Maddox, Al Doty, Donald Davis, and particularly the late Merrel D. Clubb. Many of the park rangers have been helpful, especially Dan Davis and Jim Baily. P. T. Reilly has given me the benefit of his experience in taking side trips from his river running and also from his knowledge gained from aerial reconnaissance. Emery Kolb told me of the cross canyon route by Shiva Temple and some other points. For suggesting projects pertaining to the history of the canyon, Otis "Dock" Marston was outstanding. From his voluminous files he has sent me copies of pictures, letters, and articles. More than anyone else, Dock Marston has maintained my enthusiasm for exploring the Grand Canyon.

To follow this text intelligently, one should refer constantly to the map "Grand Canyon National Park and Vicinity, 1962." Occasionally it is desirable to consult the old Matthes-Evans classic showing the east and west halves of the park separately. For use in the field one can take the individual 15-minute USGS quadrangle maps.

Apollo, Venus and Jupiter

References

Anon., *Inner Canyon Hiking,* Grand Canyon National History Association, Grand Canyon, 1970.

Fletcher, Colin, *The Man Who Walked Through Time,* Alfred A. Knopf, New York, 1968.

Hughes, J. Donald, *The Story of Man at Grand Canyon,* Grand Canyon Natural History Association, Grand Canyon, 1967.

James, George W., *The Grand Canyon of Arizona: How to See It,* Little Brown, Boston, 1910.

Leydet, Francois, *Time and the River Flowing: Grand Canyon,* Sierra Club, San Francisco, 1964.

Peattie, Roderick, *The Inverted Mountains: Canyons of the West,* Vanguard Press, New York, 1948.

Powell, John Wesley, *Exploration of the Colorado River of the West and Its Tributaries,* Washington, 1875, (various reprintings).

Stegner, Wallace, *Beyond the Hundreth Meridan: John Wesley Powell and the Second Opening of the West,* Houghton Mifflin, Boston, 1953.

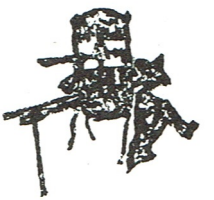
Wheelock, Walt, *Ropes, Knots and Slings for Climbers,* La Siesta Press, Glendale, 1960.

Indian ruins near Point Sublime

Index

Asbestos Canyon, 29,37,58,59
Abyss Cave, 62
Alsap Butte, 53
Angel¦s Gate, 26
Angel's Window, 57
Apache Point, 47
Apache War Trail, 49
Apollo, 57
Point Atoka, 55, 56
Awatubi Creek, 39
Banta Point, 55
Basalt Creek, 57, 58
Bass, W.W, 33, 43, 44, 51, 61
Bass Camp, 61
Bass Canyon, 44
Bass Trail, 44-47
Beamer, Ben, 39, 56
Beaver Canyon Trail, 51
Bedrock Tanks, 45
Berry Trail, 30
Big Saddle Hunting Camp, 63
bighorn sheep, 22, 36, 47, 48, 50
Black Tank Wash, 51
Bonito Creek, 63
Boucher, Louis, 43, 62
Boucher Rapid, 59
Brahma, 24, 27
Bright Angel Campground, 27
Bright Angel Creek, 19, 22, 25, 29, 42, 60
Bright Angel Trail, 8, 11, 18, 21
Buggeln Hill (Hotel), 33
Burro, Captain, 47
Burro Canyon, 46, 62
Butchart, Harvey, 7ff
CCC, 29
Cameron, 39
Cape Final, 57
Cape Royal Highway, 25
Carbon Creek, 39
Cardenas Buttes, 38
Cataract Creek, 50
Cathedral Stairs, 41
Cedar Ridge, 18
Chemihuevi Point, 45
Cheyava Falls, 21
Chiauria, Point, 56
Chickapanagi Tank, 50
Chuar Butte, 39
Chuar Valley, 56, 57
Clear Creek, 24, 27-29
Clear Creak Trail, 27, 28
Clubb, Merrel, 26, 29, 58, 61
Conquistador Aisle, 46
Cope Butte, 41-42
Copper Canyon, 45, 46
Corle, Edwin, 43
Coronado Butte, 30, 35, 36
Cottonwood Camp, 24
Cottonwood Creek, 31-33
Crazy Jug Canyon, 64
Crazy Jug Point, 64
Cremation Canyon, 18, 33
Crook, General, 50
Crystal Canyon, 59
Crystal Creek, 43, 59, 60
Crystal Forest Cave, 33
Crystal Rapid, 44
Cureton, Allyn, 18, 32, 35, 39, 42, 49
Davis, Donald, 36, 56
Deer Creek, 63, 64
Desert View, 37
Deva, 27
Deva Saddle, 29
Devil's Corkscrew, 19
Diana Temple, 44
Doty, Al, 21
Dragon Creek, 19, 60
Dripping Springs, 40
Drippings Springs Trail, 43
Driftwood Canyon, 51
Dutton, Clarence, 64
Elaine Saddle, 62
Elves Chasm, 46, 48
Enfilade Point, 48
Epsom Canyon, 42
Euler, R.C, 24, 30, 32, 47
Fletcher, Colin, 7
Flint Creek, 60
Frontier Canyon, 47
Fossil Canyon, 46, 47, 48
Four Mile Spring, 41
Fred Harvey, 40
Freya Temple, 57
Galloway Canyon, 64
Garnet Canyon, 46
Gatagama Point, 49
Geikie Point, 44
geological fori ations, 11
Ghost Canyon, 51
Gila Pueblo, 29
Glen Canyon Dam, 21
Goldwater, Barry, 53
Grand Thumb Mesa, 48
Grandview Hotel, 31
Grandview Trail, 30-32, 35, 37
Granite Falls, 41
Granite Narrows, 65
Grapevine Canyon, 30, 32
Gunther Castle, 55
Hakatai Camp, 45, 46
Hamidrik Point, 49
Hance, John, 29, 30, 35, 43
Hance Camp, 31, 36
Hance Rapid, 17, 32, 37, 43, 59
Hance Trail, 33, 37
Havasu Canyon, 49-51
Hayden, Mt, 53
Hermit Creek, 41
Hermit Rest, 40, 41
Hermit Trail, 40, 43, 53
Highwall Spring Trail, 50
Hindu Amphitheater, 59
Horn Creek, 41, 42
Horn Creek Rapid, 42
Horse Trail Canyon, 51
Horseshoe Mesa, 30, 31, 33, 37
Horsethief Trail, 55
Houserock Valley, 53
Hopis, 39, 50
Howland's Butte, 28
Hubbel Butte, 56
Huethawali, Mt, 45
140 Mile Canyon, 49
Hunt, Jay, 49
Indian Gardens, 11, 18, 19, 41
Indian Hollow Campground, 63
indian ruins, 23, 27, 32, 39, 44, 45, 46, 47, 48, 53, 55, 60, 64, 65
James, George W, 33, 37, 41
Jicarilla Point, 44
Juno Temple, 56, 57
Kaibab Bridge, 22
Kaibab Trail, 8, 17-19, 21, 25, 32
Kanab Creek, 65
Keyhole Natural Bridge, 49
Kibbey Butte, 53
Kirby Trail, 50
Kla-La-Pa Trail, 50
Kolb, Ellsworth, 27, 28
Kolb, Emery, 27, 28, 42, 61
Kwagunt Butte, 39
Kwagunt Canyon, 55
Kwagunt Creek, 39-40

Lake Mead, 11
Lake Powell, 22
Lava Butte, 56
Lava Canyon, 44
Lawes, R.E, 60
Lee, John D, 40
Lees Ferry, 11
Lipan Point, 38
Little Colorado, 36, 39, 40, 55
Loper, Ben, 45
Lyell Butte, 33
McCormick, Melvin, 40
McDonald, Harry, 56, 59
McKee, E.D, 23
McKinney, —, 51
McRae, Alan, 60
Malgosa Canyon, 55
Malgosa Creek, 39, 40
Marion Point, 53
Marston, 'Dock', 56
Matkatamiba Canyon, 49
Mather Point, 7
Matthes, François, 24
Mauv Saddle, 62
Merlin Abyss, 62
Modred Abyss, 62
Manument Canyon, 41
Monument Point, 64
Moqui Trail, 50
Moran Point, 30, 37
Mineral Canyon, 36
Mystic Spring, 44
Nankoweap Basin, 53, 62
New Hance Trail, 36
Newberry Butte, 58, 59
North Bass Trail, 61
North Kaibab Trail, 23
Obi Canyon, 24, 29
Old Hance Trail, 31, 32
Old Kaibab Trail, 25
Olo Canyon, 49
O'Neill, Bucky, 35
O'Neill Butte, 18
O'Neill Spring, 31
Painted Desert, 41
Paradise Creek, 39
Pattie Butte, 33
Paya, Earl, 49
Paya Point, 49
petroglyphs, 50, 58
Phantom Ranch, 11, 17, 18, 21
24, 25, 32, 33, 38, 42
Pima Point, 42
Pipe Creek, 18, 19, 21, 42
Platinum Tanks, 50
Powell, Wesley, 31, 40
Powell, Walter, 40
Powell Plateau, 63
Rama Shrine, 54
Red Canyon, 37
Red Canyon Trail, 36
Reilly, P.T, 49
Ribbon Falls, 24
Roaring Springs Canyon, 25
Rope Trail, 49
Ross Wheeler, 45
Royal Arch Creek, 47, 48
Ruby Canyon, 44
Saddle Mtn, 53
Salt Canyon, 39
Salt Creek, 41
Santa Maria Spring, 40, 41
Scylla Butte, 43
Scholing, Marshall, 33
Schwartz, Douglas, 57
Sears, 32
Seiber Point, 53
Sepentine Canyon, 44
Sewery, Bill, 43
Sheba Temple, 37, 58, 59
Shinumo Amphitheater, 61
Shinumo Creek, 45, 46, 62
Shinumo Trail, 61
Shiva, 60
Siegfried Pyre, 56
Sinking Ship, 30, 31, 35, 36
Sinyala Canyon, 49
60 Mile Canyon, 39
Slate Canyon, 43, 44
Solomn, 58
Sockdolager Rapid, 31, 35, 36
South Big Spring, 62
Stanton, R.B, 45, 59, 62
Stephen Aisle, 45
Stone Canyon, 64
Sturdevant, Glen, 27
Sublime, Point, 60
Sumner Point, 21, 25
Supai, 11, 44
Surprise Valley, 63, 65
Swamp Point, 63
The Tabernacle, 58
Tahuta Point, 48
Tanner Trail, 37, 38, 55
Tapeats Creek, 63, 64
Temple Butte, 39
Temple of Osris, 59
Thunder River Trail, 63, 64
Tilted Mesa, 53
Toltec Point, 47, 48
Tonto Platform, 47
Tonto Plateau, 23, 25, 28
Tonto Trail, 17, 18, 21, 30, 31,
32, 37, 41, 44
Topacoba Hilltop, 47, 48, 50
Topaz Canyon, 43
Tower of Ra, 59
Trail Canyon, 44
The Transept, 24, 25
Tuna Creek, 60
Turquoise Canyon, 44
Unkar, 62
Unkar Rapid, 38
VT Ranch, 59
Vaughn Spring, 65
Vesta, 44
Vishnu Canyon, 32
Vishnu Creek, 29, 58
Vishnu Temple, 57
Walhalla Plateau, 58
Wall Creek, 24
Waltenberg Rapid, 46
Wampler, Joseph, 50
Watch Tower, 37
White Canyon, 62
White Creek, 61
Whites Butte, 43
Wotans Throne, 28, 58
Woolsey Point, 53
Yavapai Point, 7
Zoroaster (Zoro) Temple, 27



Dr. Harvey Butchart, mathematics professor at Northern Arizona U, has the reputation of being the man who really knows the Inner Grand Canyon — undoubtedly because he is the only man who has walked, scrambled and climbed all of these remote recesses. During his twenty-five years at the University, he has spent much of his free time in the Canyon and has guided many others into his beloved gorge.

Grand Canyon is one of our better known national parks. When a visitor first stands on the rim and gazes into its depths, he is mildly impressed at the grandeur of the view — like a picture postcard. But as he continues to look down — slowly the immensity of the Inner Canyon begins to filter through. If he is a mountaineer of some experience, he will surely begin to examine some interestingly appearing area through his glass. Slowly, what appeared to be but a small knob is now revealed as a miniature mountain range with its own peaks, ridges and valleys. It is now that the need for a competent guidebook is apparent.

Harvey Butchart has travelled the maintained trails, the abandoned routes, the burro and sheep tracks — as well as the ones the very burros have given up. In addition he has put up routes through the breaks and notches and along the ridges that have never been trekked before. Harvey writes in a most tight fashion, yet bits of history and folklore are interlaced all through the text. We must warn the reader that this guidebook is not to be taken lightly -- often a short paragraph or a few words, opens up a trek that may take two or three days to check out. Here is the result of almost a lifetime of exploration — you will need another to trace them out.

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La Siesta Press